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Drug and Cosmetic Industry

NEW ORLEANS, LA

MAY 1954

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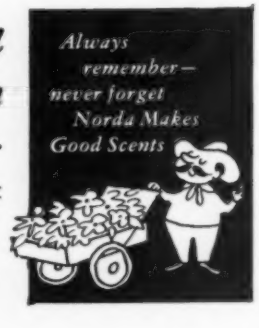

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Important Riboflavin Development

✓ Higher solubility ✓ Better taste

✓ No solubilizer needed ✓ Commercial production

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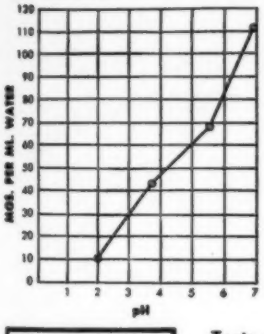
Now you can make clear solutions with a concentration of 30 mg. or higher per ml. of water when you use the new Roche riboflavin-5′-phosphate sodium. No longer do you need to use solubilizers and special techniques to achieve a satisfactory solution. Remember the trouble you had in getting a solution of even 2 mg. of riboflavin per ml.? Those days are now past.



SOLUBILITY of Roche riboflavin-5′-phosphate sodium in water at different pH levels; room temperature.

These data show that solubility of Roche B_2 phosphate sodium depends on hydrogen ion concentration in water. It is useful to note that the solubility of riboflavin U.S.P. (approximately 0.12 mg. per ml.) inserted on graph would fall just above the base line.

specifications

Tests show that B_2-5′ (M.W. 514.4) has the full theoretical activity on the molecular basis of riboflavin (M.W. 376.36). Theoretically one gram of the phosphate is equivalent to 0.73 grams of riboflavin. The Roche product contains small amounts of moisture, disodium salt, diphosphate ester and unesterified riboflavin. It has a riboflavin activity of 70-73% by weight.

biological availability

Roche riboflavin-5′-phosphate sodium has immediate biological activity because it is identical with the natural flavin mononucleotide occurring in the "yellow" respiratory tissue enzyme system.

better taste

Roche riboflavin-5′-phosphate sodium does not have the intensely bitter taste of riboflavin itself. It is more palatable in high concentrations. The different taste is of definite advantage in oral preparations.

solubility—taste demonstration

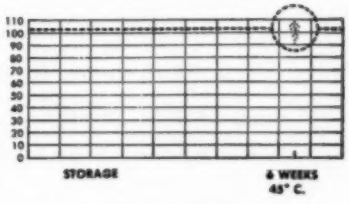
You can prove to yourself, easily and quickly, the solubility-taste advantages of Roche riboflavin-5′-phosphate sodium with the Roche demonstration kit. Ask your Roche representative to show it to you. Or we'll be glad to send one, without charge, at your request.

cost comparison

Even though the cost of Roche B_2-5′ is somewhat higher than regular riboflavin, its use can result in actual savings. You eliminate expensive solubilizers and unnecessarily large amounts of niacinamide. You reduce or eliminate costly complaints and returns. You are able to make manufacturing economies.

stability

Chart demonstrates stability of Roche product in B-complex parenteral solutions with and without vitamin C over wide potency range.



uses

The new riboflavin-5′-phosphate sodium, probably the most important riboflavin development since Roche introduced the vitamin commercially in 1941, is specially designed for use in manufacturing:

- vitamin parenteral solutions
- water-dispersible multivitamin drops and gelatin capsules
- tablets (in which rapidly-soluble riboflavin is desirable)

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Drug and Cosmetic Industry

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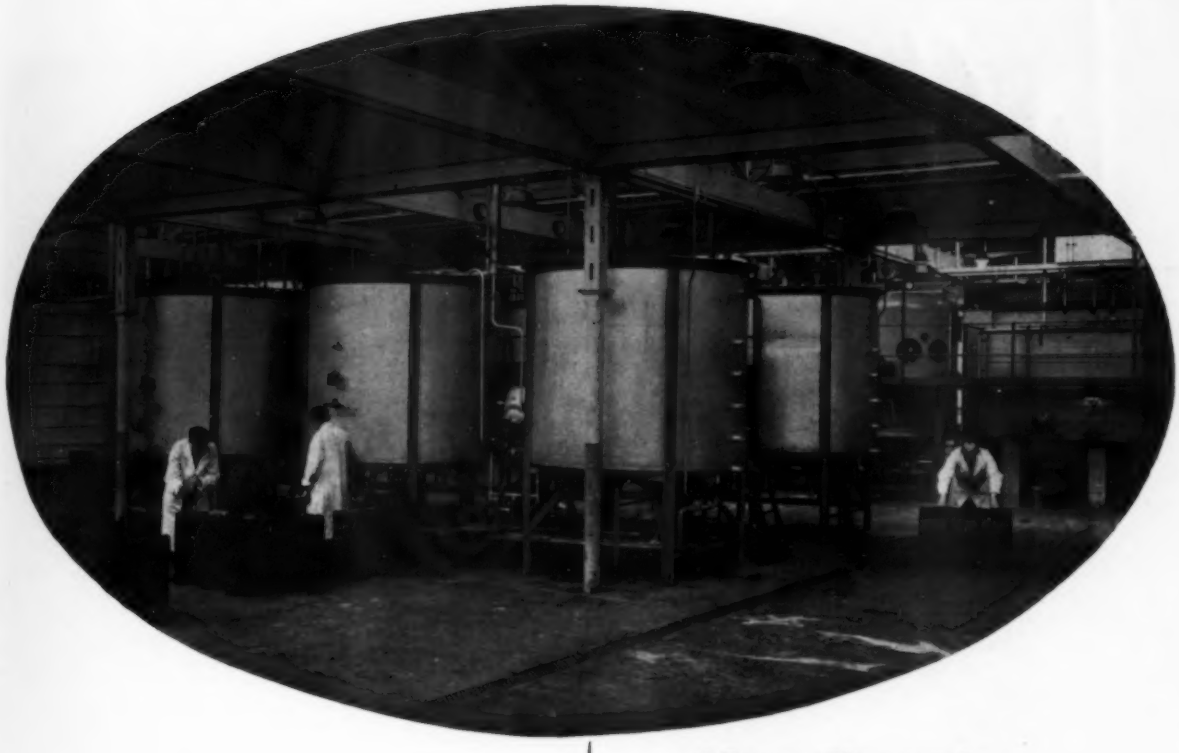

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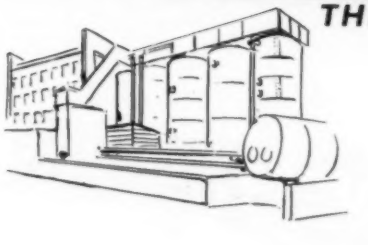

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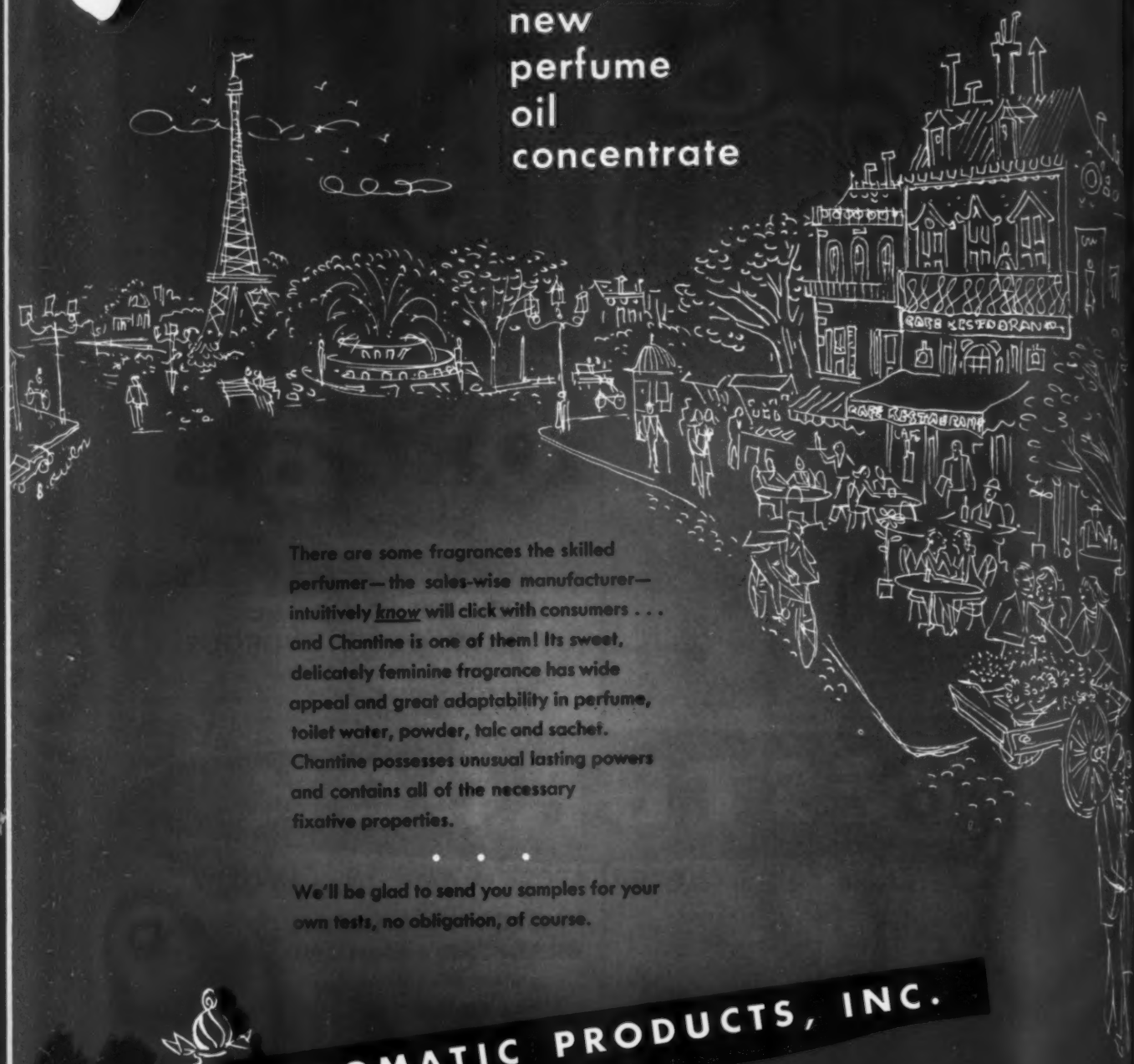

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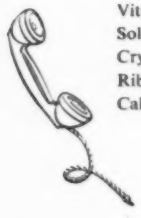

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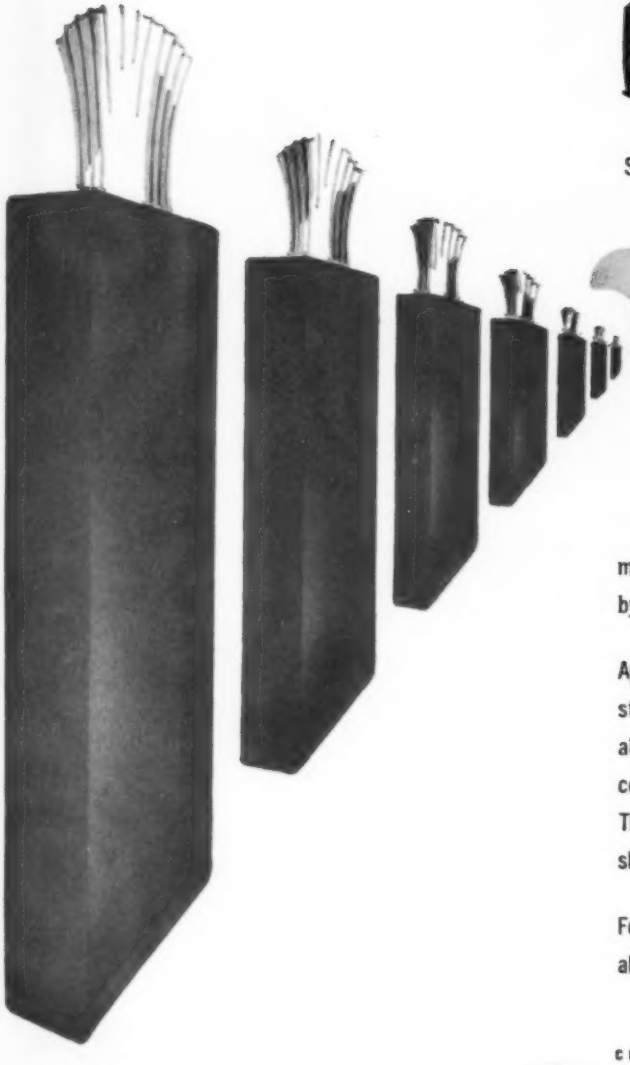

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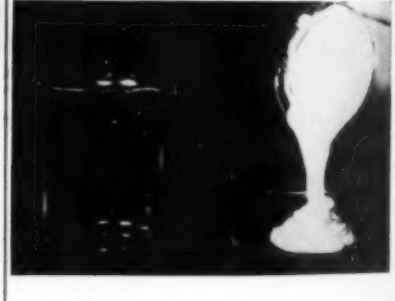

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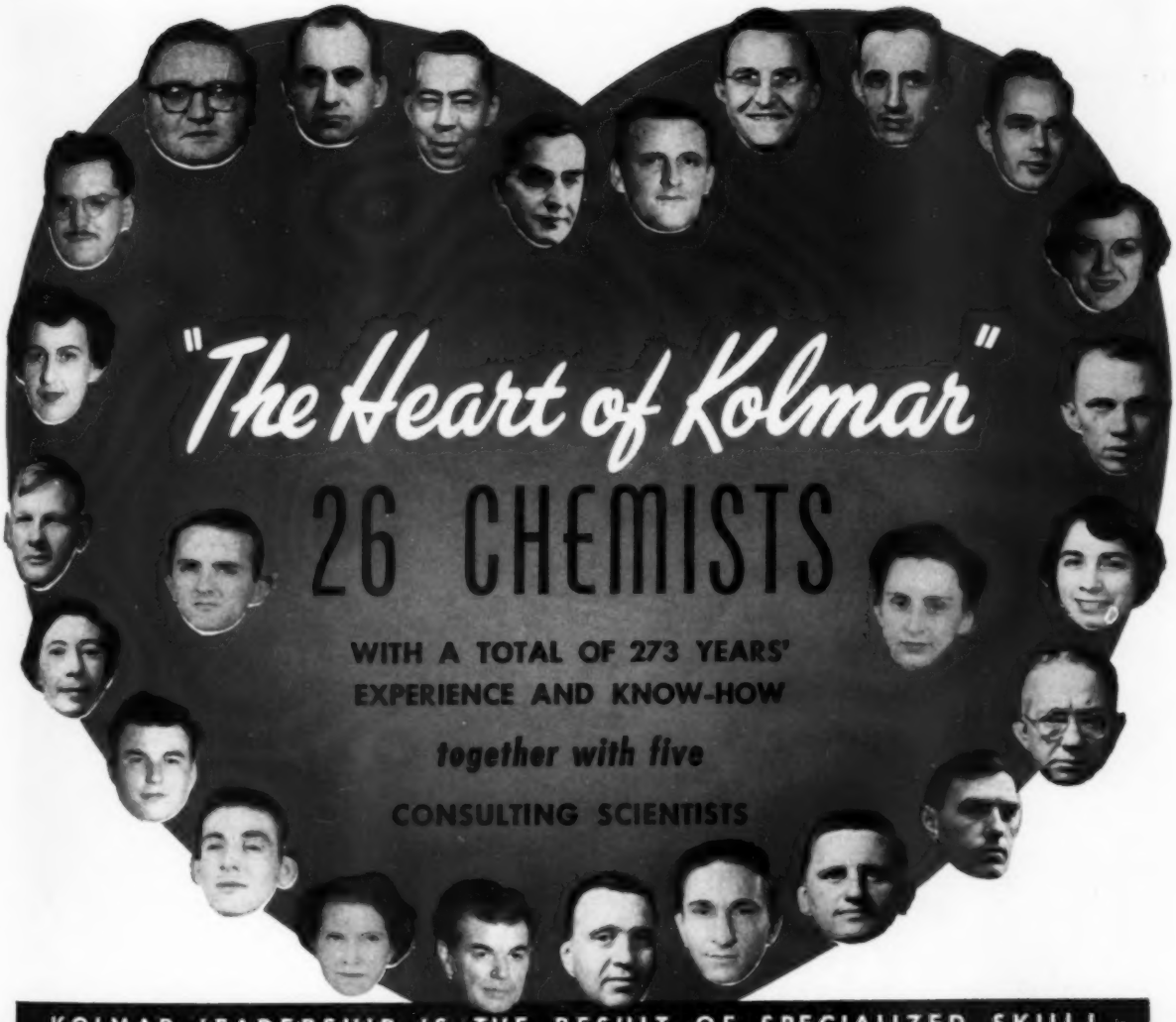
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*Chemical Senses, page 1, Moncrief—lists senses as follows: "sight, hearing, touch, taste, smell." Note smell is listed Fifth.

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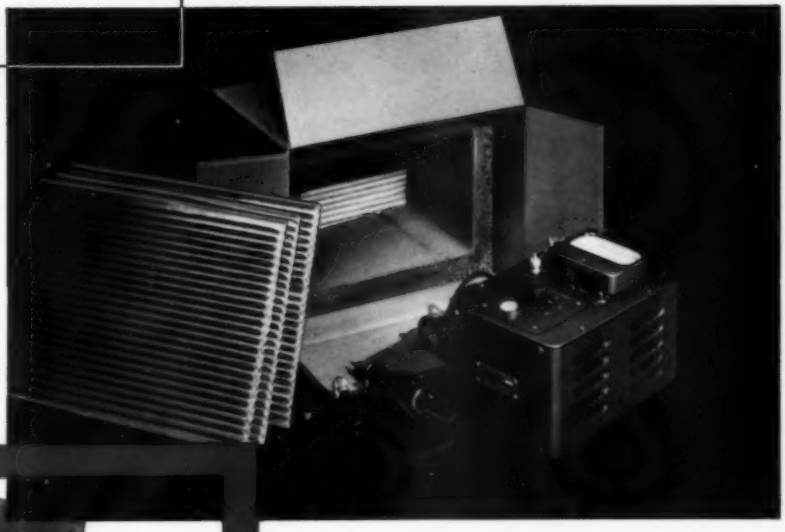

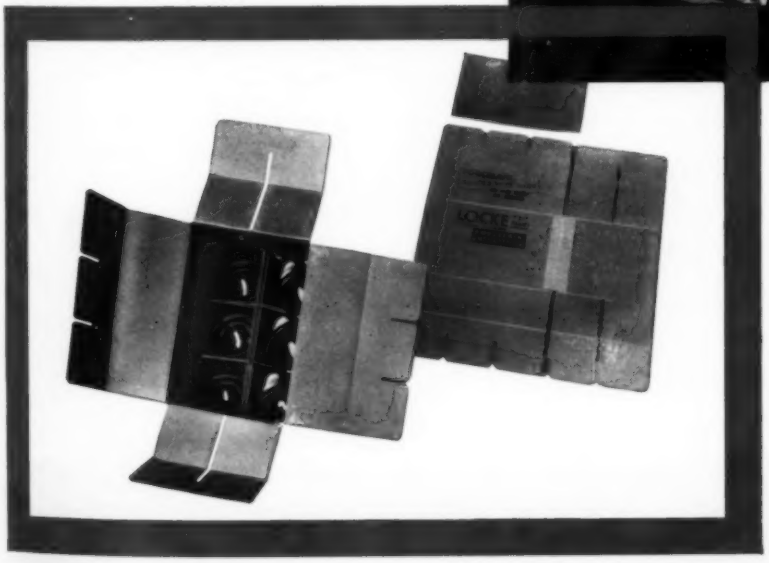

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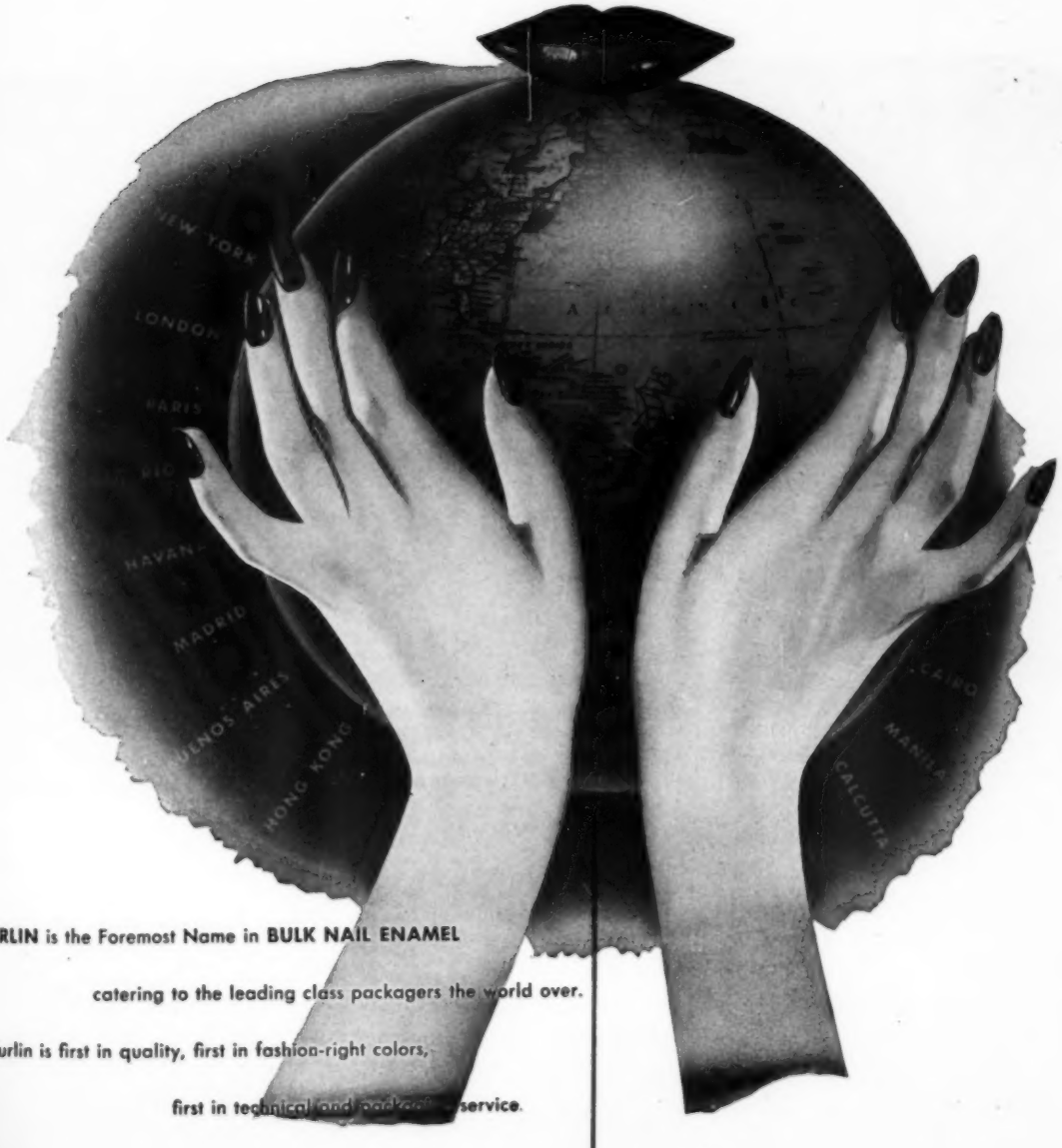

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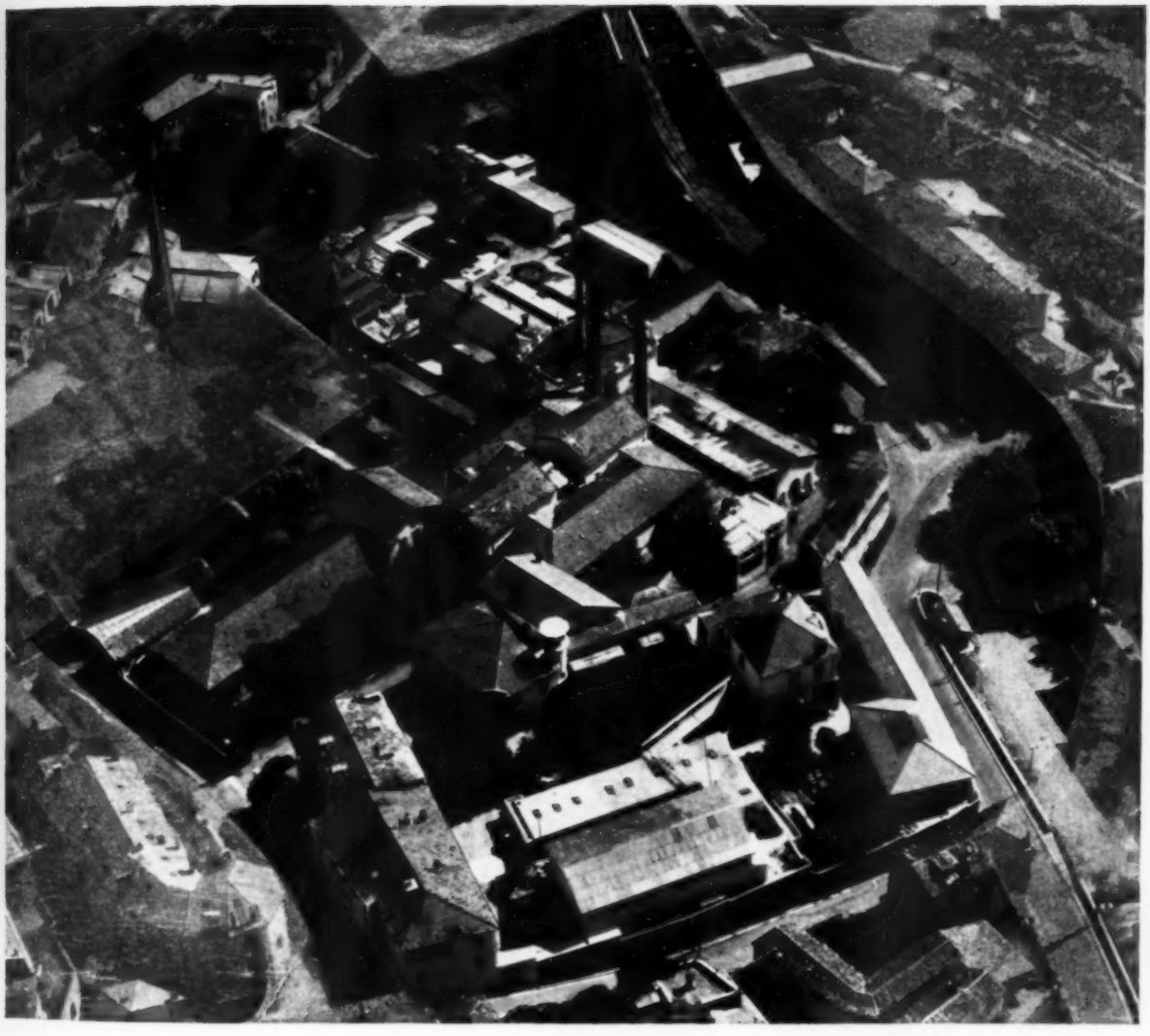

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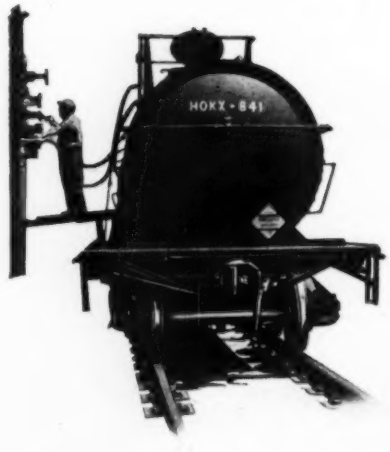

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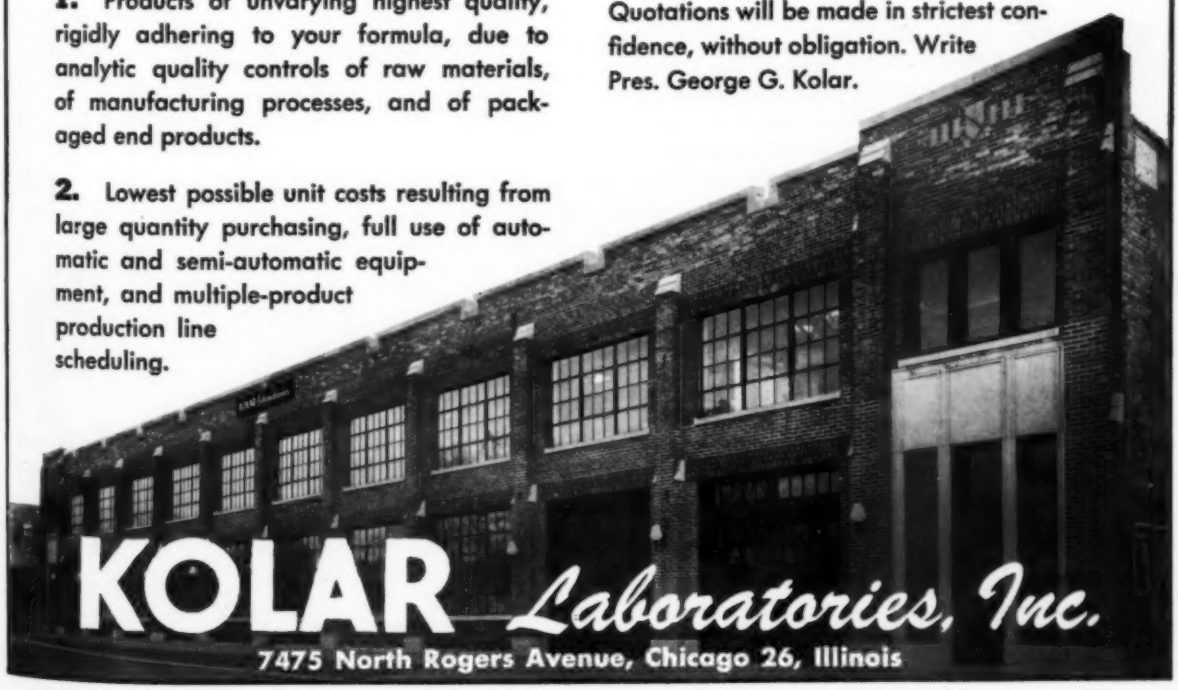

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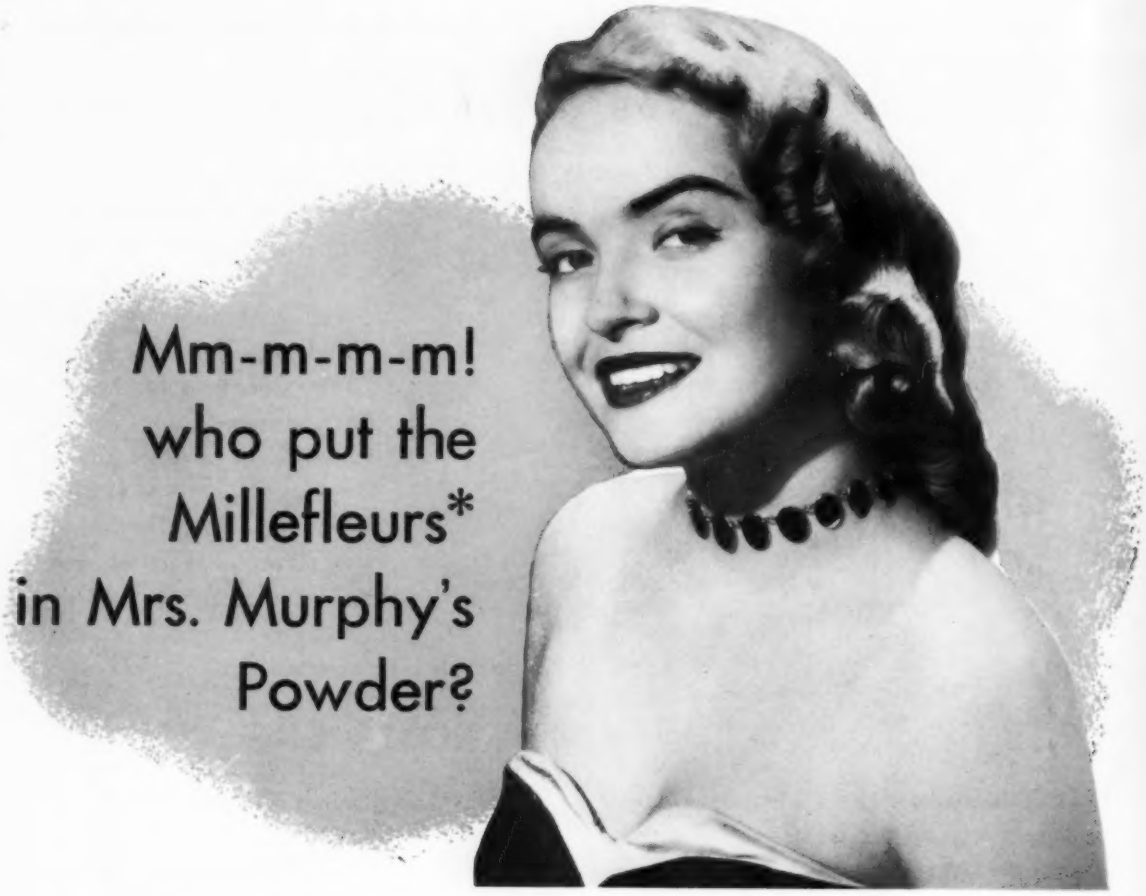

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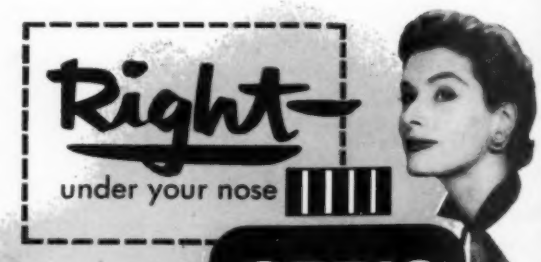

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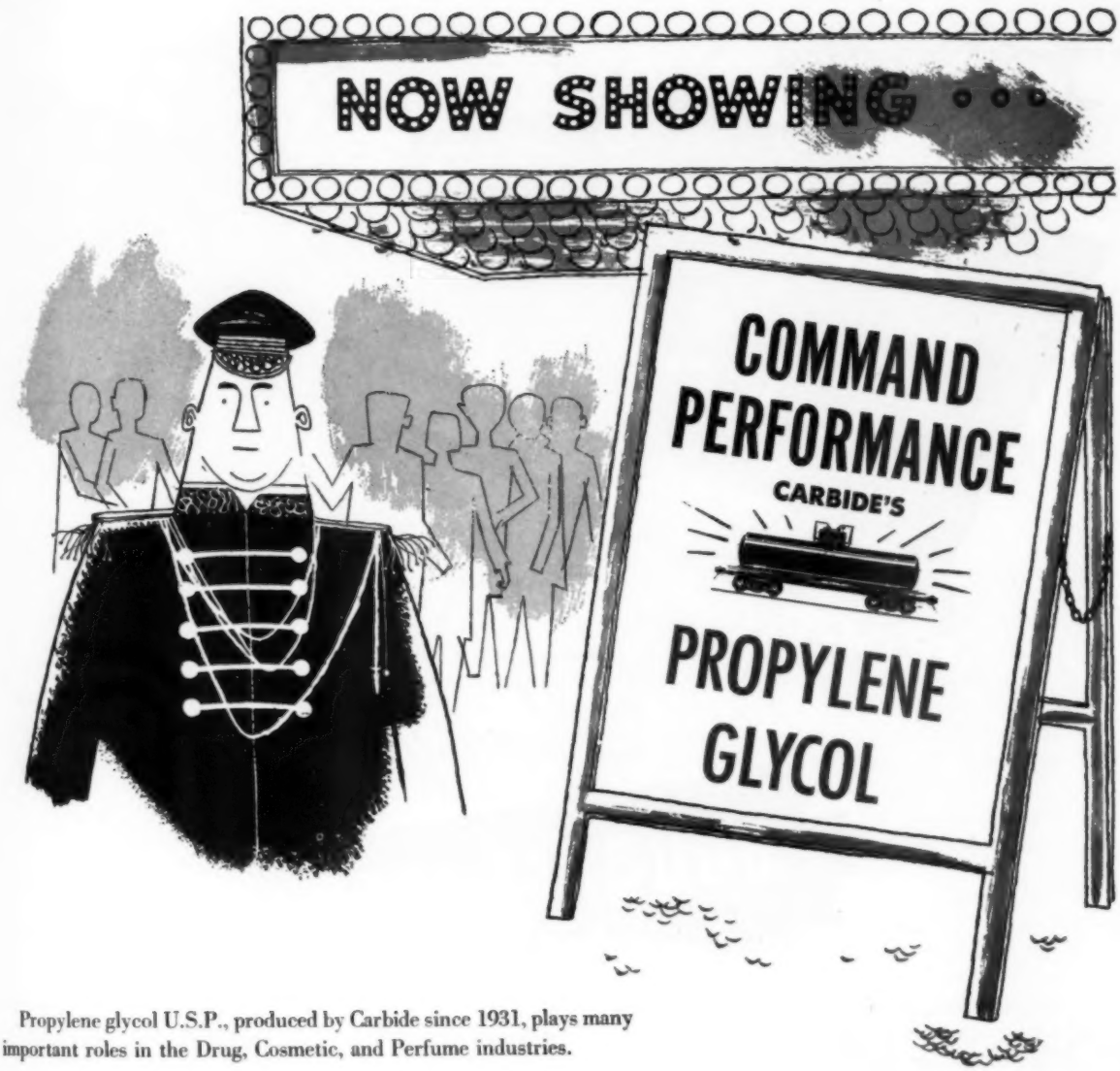

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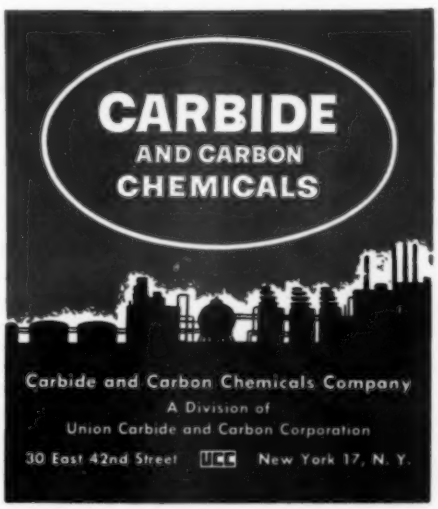

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Notes from the makers of
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Vitamin A
in a shrimp's eye

We used to make vitamin A out of fish liver oils. Europe *still* gets much of its vitamin A from Antarctic whales with the help of radar, explosive harpoons, and highly efficient factory ships.

But, modern as it is, this is still the hard way.

In 1948 we brought out the first man-made vitamin A available in America in commercial quantities. It started something. The whole American industry turned to synthetic vitamin A.

Yet, our scientists keep eyeing those whales. For the whale—and other creatures of the sea—still harbors secrets about vitamin A we'd like to know more about.

We are interested, for example, in the fact that the whales feed interminably on shrimp. Running it back a step, we find that shrimp manufacture vitamin A in their eyes, and in great quantity—as much as 12,000 International Units of vitamin A per gram, dry weight, for large specimens of *Meganyctiphanes norvegica*.

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So we keep inquiring about it—even though we've left the shrimp and the whale far behind as economical producers of vitamin A.

Vitamin A is a fast-breaking subject. If you use it in your product, it's nice to be able to feel that you won't be caught in the backwash of developments. You enjoy that feeling by keeping in touch with the makers of Myvax Vitamin A and Myvapack Vitamin A—both immediately available from stock so that you can keep your vitamin A inventory at any level you like. ***Distillation Products Industries,*** Rochester 3, N. Y. (Division of Eastman Kodak Company). Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto • W. M. Gillies and Company, Los Angeles and San Francisco.

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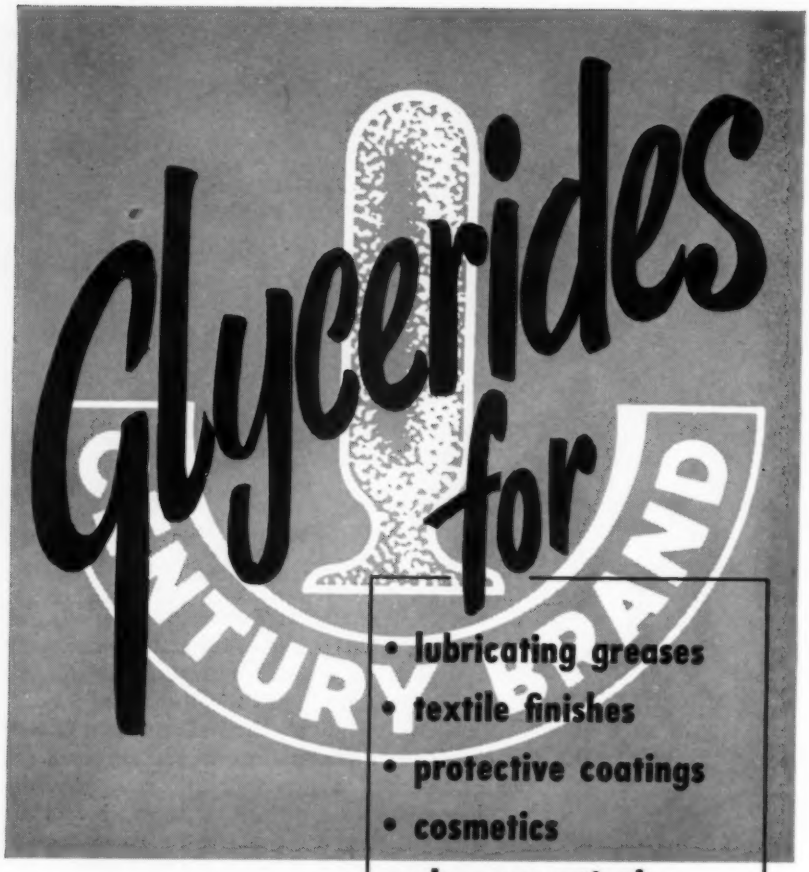

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CENWAX G is a glyceride chemically, although physically it resembles a wax. It is a hard, high melting point solid, available in finely beaded form, with practically no taste or odor. Typical applications are in lithium, barium, or sodium greases; hot-melt paper coatings; extender for higher priced waxes in polishes. These CENWAX G specifications should suggest other uses:

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Acid Number	4.0
Saponification Number	176-184
Iodine Value (WIJS)	1- 5
Melting Point (°C)	82- 85
Hydroxyl Value	155-165
Acetyl Value	137-148

• CENTURY HYDREX 350 *(Hydrogenated Tallow Glyceride)*

This hardened tallow product is available in beads and its good color, high titre, and low iodine value particularly suit it for use in certain textile finishes and lubricating greases.

Specifications

Titre (136.4-140.0°F)	58-60.0°C
Iodine Value (WIJS)	1-3
Free Fatty Acid	1-3%
Acid Number	2-6
Saponification Value	190-195
Color 5¼" Lovibond Column (Max.)	15 Yellow-2 Red

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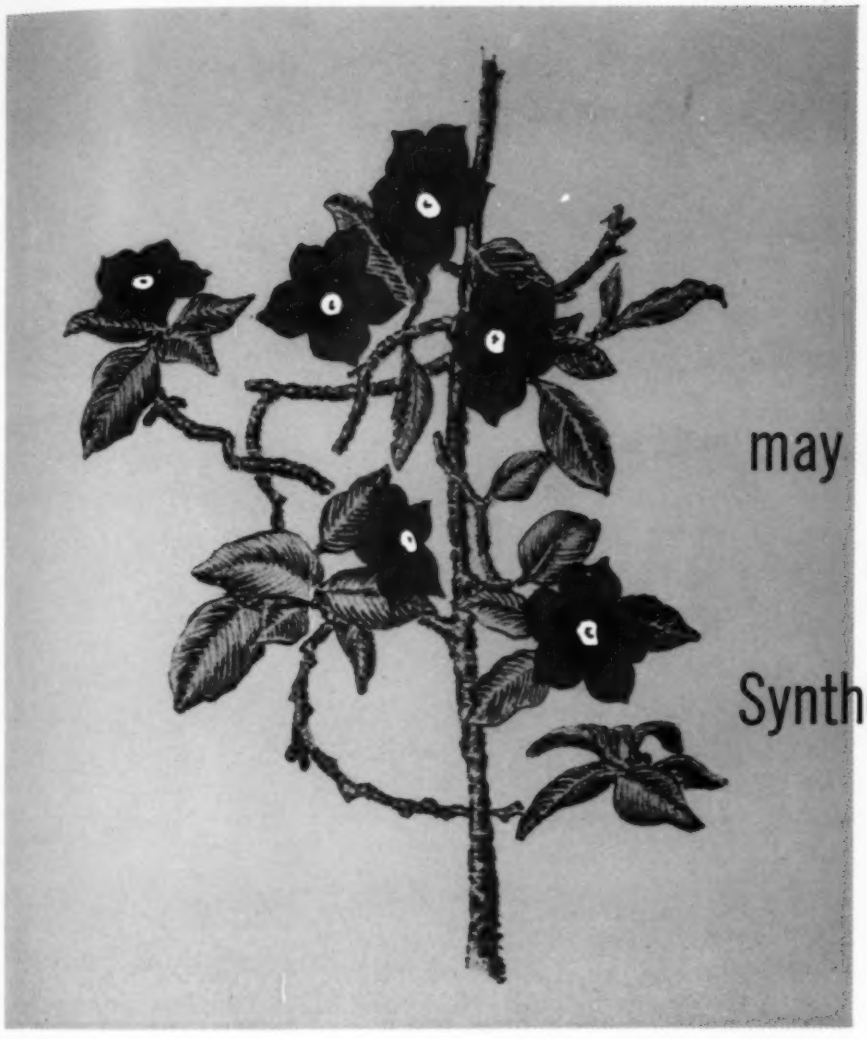

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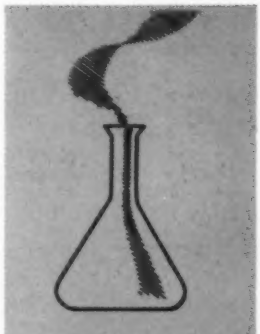
Have you met this "Lady of the Night," this great beauty, *Brunfelsia*..."The Flower of Unforgettable Fragrance?" It's intense, and yet, it's delicate. It's light, and yet, it lasts. Dreyer has not duplicated this rare scent, but Dreyer does duplicate Nature, with many distinguished floral scents. Re-creations by Dreyer really *re-create* all the characteristics of natural flower odors. It is hard to distinguish a Dreyer Synthetic Floral Creation from the original it has copied. There's one difference, though. Dreyer Perfume Concentrates are often more stable, longer-lasting than the originals. They save you money. Send today on your letterhead for samples.



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when using fine chemicals . . . to be sure √ *check the source*

We have the Large Size, the Giant Size, and the Economy Size. Why not go all out, gentlemen, with a Super Colossal size?

Boric Acid Again

Evidently the boric acid toxicity matter was far from settled by the action of the Food and Drug Administration's approval of its use in talcum powders used for babies up to five per cent. As we announced last month, two Canadian baby hospitals have banned the use of boric acid so far as babies are concerned, and early last month Dr. William J. McConnell, associate medical director of the Metropolitan Life Insurance Company, attacked its use. Dr. McConnell told the annual meeting of the Greater New York Safety Council that some infants are, more than others, subject to boric acid and other drug poisoning through skin absorption. Referring to 109 cases of boric acid poisoning reported in the medical literature, Dr. McConnell said:

"In one case, the source of intoxication was the repeated application of a popular brand of baby powder whose active ingredients are talc and boric acid. The usual story is that of an infant who develops diarrhea with an abrasion of the skin of the buttocks. The boric acid is absorbed and produces not only an increase in the excoriation but also intensifies the diarrhea and vomiting. The inflammation is usually intense and may extend over the entire body surface."

Dr. McConnell said that more than 1,500 deaths are caused annually in the United States by accidental poisoning by drugs and other substances and that for every death, there are 100 more cases of accidental poisoning severe enough to require hospital care. Reporting a rise in the mortality rate from barbiturate poisoning, Dr. McConnell said 400 such deaths were reported in 1950, an increase of about 50 per cent in ten years.

Financial Report Gleanings

Scanning the financial reports for the year 1953, we find the following:

Colgate-Palmolive Company's Toilet Article Department sales were unchanged from the previous year, but profits were lower due to "intense competitive activity and important developments in 1953 in dentifrices, a field which the Company continues to lead. In keeping with this position, the Company has devoted a large part of its research facilities and has supported independent research toward the development of improved dentifrices. As a result of these efforts, ingredients promising lasting anti-enzyme action were discovered several years ago and, in due course, released for clinical testing. The results of the clinical tests were so impressive with respect to the reduction of tooth decay that the Company converted its entire production of Colgate Dental Cream to include our anti-enzyme called Gardol.

"Rapid-Shave, the Company's aerosol shave cream introduced in 1952, enjoyed remarkable success in 1953 and is now out-selling all competitive products. In our other major product lines, including Halo and Lustre-Creme Shampoos, Veto deodorants and Cashmere Bouquet beauty preparations, sales were well maintained."

Sterling Drug reports that new highs were recorded in sales of Bayer Aspirin and Phillips Milk of Magnesia—quite a feat when one considers the number of competitive products on the market at lower prices. However, the dollar volume increase for these two items might be due to the fact prices were advanced on both of them. Sterling also reports a record sales volume for Winthrop-Stearns despite a substantial decline in government orders and a long strike which closed its principal plant. Increased sales were also recorded for Cook-Waite Laboratories (dental anesthetics); George A. Breon & Company (pharmaceuticals); and Sterwin Chemicals.

Norwich Pharmacal Company reports a five per cent sales increase to $18,896,197, with the Eaton Laboratories subsidiary recording a 33 per cent sales increase in 1953, following a 40 per cent sales increase in 1952. Norwich's leading specialty, Pepto-Bismol, again established a new sales record. "The wide acceptance of this product has made its growth almost phenomenal in recent years," says the report. Introduced during 1953 were a pre-packaged Terpin Hydrate with Codeine, Nose Drops with Neo-Synephrine, adult strength Flavored Aspirin, and Lanolin Cream. New Products announced for this year are Norwich Hemorrhoidal Ointment and Norwich Neomycin Ointment.

Chas. Pfizer & Co. reports that the Pfizer Laboratories Division, established in 1950 as the Antibiotic Division,

now has over 600 professional service representatives (detail men). In addition, the company reports that the J. B. Roerig & Company Division's detailing force was increased from 150 to over 400 representatives early in 1954. This makes a combined detail force for Pfizer of approximately 1,100 men.

Pfizer sales volume reached a peak of $127 million, an increase of $20 million or 18 per cent over 1952. The Chemical Sales Division was responsible for close to 30 per cent of the sales of the company, or about $38 million. "Sales of synthetic vitamin A Crystalets, vitamin B_{12}, vitamin C and bulk antibiotics counted significantly in the division's increased volume," says the report, which continues," sales of citric acid reached the highest point in the Company's history and several industrial chemicals, chiefly gluconic acid and sodium gluconate, also showed substantial gains."

The Pfizer Laboratories Division accounted for approximately 35 per cent of sales, or about $44.5 million. The Agricultural Division accounted for six per cent, or about $7.6 million, and the Foreign Trade Subsidiaries accounted for 28 per cent of sales, or approximately $35.5 million.

Rexall Drug President Justin W. Dart says that this company will continue its long range plan of diversification. "The number of company-owned stores will be further reduced. We are concentrating our efforts on building the Rexall division (the sale of Rexall drug products to Rexall druggists) through our steadily increasing advertising and merchandising program. We are emphasizing the development of our manufacturing division. We are planning for progressive growth and development of our new ethical division, Riker Laboratories, in the United States, Canada, Great Britain, and South Africa. Through the medium of V.C.A. Laboratories we are endeavoring to establish a position in the open market with vitamins and other proprietary drugs."

Mr. Dart reports that during 1953, four new stores were opened and 23 stores were sold or closed, making a reduction of 19 stores owned by the company. During 1954 the company will open "several new outstanding drug stores," but will continue to sell or close more low volume stores. In addition to the two combination grocery and drug stores operated by the company, a third such store is planned for this year near Los Angeles. Riker Laboratories showed a profit in 1953, and is expected to show improvement in 1954. V.C.A. Laboratories, makers of Rybutol, Juvenol, and Liquid Rybutol had no earnings in 1953 and, therefore, no payments were required on the balance of the purchase price of that company.

Avon Products continued to establish new records for sales, reaching a volume of $47,033,052 in 1953, an increase of 15.3 per cent, or $6,235,639 over the previous record of $40,797,413 for 1952. During 1953, many new changes were made in products, says the report, and 20 new items or new formulations were introduced which contributed materially to the volume of business. "Consumer acceptance of these new items was such that it is planned to continue them in our line," says the report. "Fifteen other new items already are scheduled for the introduction in 1954, and there will be further additions before the close of the year."

Eli Lilly & Company reports an all-time high of $125,281,000 for sales in 1953, compared with $120,089,000 in 1952. The 1953 sales volume was more than a million dollars over the previous record high set in 1951. Net income for 1953 was $12,374,000, compared with $11,711,000. Earnings per share, which were $4.85, compared with $4.59 in 1952, were reduced 75 cents per share by losses on foreign exchange resulting substantially from devaluation of Brazilian currency. Sales for 1953 were stimulated by the introduction of forty new and improved products produced through research and development, according to Chairman Lilly and President Beesley. Outstanding among these were several new pharmaceutical forms of Lilly's new wide-range antibiotic, Ilotycin (erythromycin, Lilly).

The tables following give the sames volumes and net profits of selected companies for 1952 and 1953, indicating the percentage change in all cases.

SALES

	1953	1952	Per Cent Change
Abbott Laboratories	$ 88,142,000	$ 85,528,000	+3.
American Home Products	188,300,000	184,592,000	+2.
Eli Lilly & Company	125,281,000	120,089,000	+4.3
Merck & Co.	160,002,000	160,648,000	—
Norwich Pharmacal Company	18,896,197	18,003,649	+4.8
Parke, Davis & Company	109,852,079	126,313,461	—13.
Chas. Pfizer & Co.	127,002,576	107,084,105	+18.6
Sterling Drug	161,706,271	157,059,776	+3.
Warner-Hudnut, Inc.	60,224,000	57,092,000	+6.

NET PROFIT

	1953	1952	Per Cent Change
Abbott Laboratories	$ 9,220,042	$ 8,845,906	+ 5.3
American Home Products	13,093,000	11,735,000	+11.6
Eli Lilly & Company	12,374,000	11,711,000	+ 5.7
Merck & Co.	11,389,000	11,906,000	— 4.3
Norwich Pharmacal Company	1,456,396	1,375,460	+ 5.9
Parke, Davis & Company	9,344,017	16,256,343	—42.5
Chas. Pfizer & Co.	14,159,604	11,362,282	+24.7
Sterling Drug	11,560,069	10,495,968	+10.1
Warner-Hudnut, Inc.	3,619,000	2,927,000	+23.

Methyl Salicylate Warning

The Food and Drug Administration has a ruling that any drug preparation containing more than five per cent of methyl salicylate will be misbranded unless a warning is given in the labeling of the product. The FDA statement reads:

"(a) Because methyl salicylate (wintergreen oil) manifests no toxicity in the minute amounts in which it is used as a flavoring, it is mistakenly regarded by the public as harmless even when taken in substantially larger amounts. Actually, it is quite toxic when taken in quantities of a teaspoonful or more. Wintergreen oil and preparations containing it have caused a number of deaths through accidental misuse both by adults and children. Children are particularly attracted by the odor and are likely to swallow these products when left within reach.

"(b) To safeguard against fatalities from this cause, the Department of Health, Education and Welfare will regard as misbranded under the provisions of the Federal Food, Drug and Cosmetic Act any drug containing more than five per cent methyl salicylate (wintergreen oil), the labeling of which fails to warn

that use otherwise than as directed therein may be dangerous and that the article should be kept out of reach of children to prevent accidental poisoning.

"(c) This statement of interpretation in no way exempts methyl salicylate (wintergreen oil) or its preparations from complying in all other respects with the requirements of the Federal Food, Drug and Cosmetic Act."

Schering Medical Student Awards

Medical specialists in their special fields have selected the three winning papers in the 1953 Schering Award competition for medical students. A $500 prize goes to the winner for each of three topics. Two of the winners expressed professional interest in research.

George Richard Pieper, junior at the University of Utah College of Medicine, who lives in Salt Lake City with his wife, who is a nurse, and their child, wrote on Antihistaminic Treatment of Upper Respiratory Allergies and Infections. Upon graduation he plans interneship and later academic medical research in pharmacology.

Frank Edward Young, sophomore at State University of New York at Syracuse College of Medicine, who lives in Merrick, Long Island, N. Y., wrote on Hormone Therapy of the Degenerative Diseases. He hopes to interne at Presbyterian Medical Center, but has not decided whether to go into practice or research.

Irving Paul Pollack, sophomore at University of Maryland College of Medicine, of Baltimore, and an accomplished pianist, wrote on New Concepts in the Treatment of Peptic Ulcer. He has a particular interest in genetics and plans to interne.

First Chloromycetin Patient Well

Parke, Davis & Company announced early last month that "the man and wife who were the first of more than 11,000,000 patients to be treated with the antibiotic, Chloromycetin, have just been contacted again near here—and are still talking about the 'miracles' that snatched them from the grave in 1947. Gregorio and Basilia Zalles are living happily in a small village with their two children, a 10-year-old daughter and a five-year-old son. The latter was born after his parents unbelievably survived typhus." The news comes from La Paz, Bolivia. Now working as a carpenter, Zalles said he and his wife have been well ever since Dr. Eugene H. Payne, of Parke, Davis & Company, made the first clinical tests of the antibiotic which subsequently has been used by physicians in practically every country of the world.

Zalles told how a death certificate had been filled out for him, except for the date. His grave had been dug. He had been in listless coma for three days, unable to speak or swallow food and water. His pulse was "faint and thready," and his temperature was down to 95 degrees. Although there seemed to be little hope of success, Dr. Payne administered the new drug "in the name of humanity." Forty minutes later, Zalles opened his eyes and asked for a drink of water. For two days he was given intravenous doses until he was able to swallow. By then, he had regained full possession of his tongue and he demanded food and water. In a few days, he was discharged.

His wife was in profound stupor, interspersed with delirium. Her fever was above 105 degrees and her pulse was throbbing at 140. She was partially paralyzed and breathing with great difficulty. Unable to take medicine by mouth, she received an intravenous dose of 0.2 grams of Chloromycetin. Within three hours she reacted for the better and was given another shot. Twenty-four hours later, her pulse and fever were normal. More Chloromycetin was administered. That night she sat up to eat. A few days later she went home. Dr. Payne and his colleagues had enough Chloromycetin at that time for only 22 cases. All recovered. Of the 50 untreated cases studied as a control, 14 died after 11 to 28 days of suffering.

Chlorophyll Effectiveness

In a paper delivered before the American Chemical Society, Paul de Kruif reviewed chlorophyll from August, 1950, when his article, Nature's Deodorant, appeared in Readers' Digest. He told of many mistakes which were made in the application of chlorophyll, and the damage done to chlorophyll's reputation as the result of its unwarranted exploitation. Among many other things, de Kruif spoke of the charge made by a Johns Hopkins doctor that the copper-chlorophillins were harmful to the liver because of their copper content. Said de Kruif:

"Dr. Joseph W. E. Harrison and his associates, of Philadelphia, had already back-fired this suspicion. They fed water-soluble copper chlorophyll derivatives to hundreds of laboratory animals. At an intake so high that it was equivalent to 77,000 pieces of chlorophyll gum chewed daily by a 150-pound man—over half a lifetime. The result? All animals stayed healthy. As it occurs in chlorophyll derivatives, copper is harmless."

Then de Kruif tells of the discovery of the chlorophyll derivative which is truly effective in controlling odors. He said:

"Searchers in the chlorophyll deodorant field had to meet a more serious objection. All commercial products were mixtures. None pure. Could it be these *impurities* —not chlorophyll derivatives—were responsible for deodorant activity?

"This objection has been answered by Dr. Henning von Dobeneck of Munich, Germany. . . . In 1953, he buried the notion that chlorophyll derivatives do not contain among them a compound that has the real deodorizing McCoy. It is iso-chlorin-e_4-copper complex crystal-pure that is specific against halitosis and B-O. This was quickly confirmed by Dr. Frank D. Pickel and his associates in New York City.

"For the chlorophyll industry this discovery was as momentous as the isolation of thiamine was to the vitamin industry 20 years ago.

". . . But now Dr. Henning von Dobeneck's discovery of the green crystals, iso-chlorin-e_4-copper complex, explains scientifically what was only magical. He has proved this compound to be more than a mere deodorant. It is an antibotic. Powerful against microbes

like staphylococcus that make wounds chronic and unconquerable.

"This isolation of the pure, chemically characterized deodorant principle blows away another mystery of chlorophyll's mercy. For example, the original over-the-counter chlorophyll tablets such as Nullos—still going strong—taken internally, are unquestionably effective against B.O. How can it be? Now it becomes clear—"Active chlorophyll compounds are antibiotic against intestinal microbes that may be responsible for odors, both of the breath and the body."

Prescriptions 30 Per Cent U.S.P.

In an evaluation of 90,790 newly compounded prescriptions made in New Jersey last Fall, 30 per cent of the prescriptions were found to be for U.S.P. items. In comparing this figure with an evaluation of nearly 65,000 prescriptions made a year ago, it was found that the U.S.P. figure had dropped two per cent since that time. This evaluation of 176 prescription studies made by pharmacy internes of the New Jersey State Board of Pharmacy also reveals that half of these prescriptions for U.S.P. drugs were written for these drugs under their official titles, while the other half of them were written under trade names. Only 6.2 per cent of all new prescriptions were written for N.F. drugs, of which slightly more than half were prescribed under their official titles, and the balance under trade names. A total of 41 per cent of the prescriptions were written for preparations which were not official in the U.S.P. or N.F.; nearly 22 per cent were written for mixtures of drugs official in the U.S.P. or N.F. with preparations which are not included in either compendium; and 1.2 per cent were written for preparations official in the New Jersey Formulary.

The percentage of all new prescriptions containing some narcotic drug was unchanged from a year ago at 15 per cent. There was a further drop in the percentage of prescriptions renewed as compared with the total of all prescriptions filled. During the period of time these 90,790 new prescriptions were filled, there were also 51,030 prescriptions refilled, making a total of 141,820 prescriptions. The percentage of refills of all prescriptions compounded is approximately 36 per cent, against 38 per cent a year ago.

Squibb Gives 40 Per Cent

We note that E. R. Squibb & Sons have advanced to list prices under fair trade those Squibb products heretofore fair traded at list prices less 10 per cent. This will result in a minimum of forty per cent gross profit on these products, the company points out. All other Squibb products on which a specific minimum resale price has been established are listed in a modified Resale Price Schedule. A substantial number of Squibb products has been transferred from the minimum resale schedule to those products now fair traded at list.

Liking to play with figures, we would like to point out that a dollar item previously sold at 10 per cent off list, cost the druggist 60 cents and sold for 90 cents. This meant a gross profit of 33 1/3 per cent, and a markup of 50 per cent. With such an item now selling at the list price of $1.00, the gross profit becomes 40 per cent, and the markup 66 2/3 per cent.

Eat Sweets—And Brush

Bristol-Myers Company is advertising Ipana tooth paste with what they call "the first realistic approach." Since Ipana contains an acid-inhibiting ingredient, the advertising encourages the eating of sweets and the regular brushing of the teeth after the eating of sweets. The company says that "the campaign is aimed at clearing up public concern and confusion that has resulted from warnings by dentists and teachers, which have informed people that the eating of sweet foods is associated with tooth cavities." The Ipana advertising recommends that people continue eating the sweets they want and need for quick energy and a balanced diet and protect their teeth against cavities by brushing after eating with Ipana.

Regarding the effort of the dental profession to discourage the eating of sweets as a means of tooth protection, Dr. Walter B. Elvers, dental adviser to Bristol-Myers, says:

"Asking people to stop eating sweet foods, because they are blamed as a cause of cavities, can be compared with asking them to stop associating with other people because that is the cause of contracting colds and many other ailments.

"We must all face the facts that eating sweets is something the majority of people want to do, will continue to do, and which contributes to their health and pleasure."

Explaining that an objective of Ipana advertising is to encourage children to associate the act of eating with the brushing of teeth, Dr. Elvers said:

"It seems reasonable that such an approach should not only relieve some of the misapprehension children and parents may have about eating sweets, but also should increase tremendously the child's interest in the whole subject of dental health. It is simply a case of putting to work in his own interest the child's known love of sweets."

Fritzsche Award to Penfold

A. R. Penfold, Director of the Museum of Applied Arts and Science of Sydney, Australia, the winner of this year's annual gold medal—$1,000 Fritzsche Award, presented to him during the recent 125th National Meeting of the American Chemical Society, was recently the guest of honor at a dinner tendered to him by F. H. Leonhardt, Chairman of the Board of Fritzsche Brothers, Inc., donors of the award. Mr. Penfold told the guests at the dinner that, to the best of his knowledge, the Fritzsche Award is the only chemical award that is international in scope, adding that as its recipient, his work has already gained "a new lease on life." He stated further that the favorable reaction stimulated by this great honor would undoubtedly result in the appropriation of funds sufficient to undertake studies that should, within a few years, lead to a solution of the origin and functions of essential oils in plant metabolism.

He told briefly how in 1924, quite by luck and chance observation, he had examined the leaves of five botanically identical eucalyptus trees while waiting for a tire to be changed on his car and had discovered upon crumbling the leaves of two of the trees that their odor was very unlike the odor of the other three. This led ultimately to the important discoveries of Penfold and his collaborators which he calls the physiological variation of plants, or as Dr. Ernest Guenther, vice-president of Fritzsche Brothers, explained it, "the fact that plants which are absolutely identical, both botanically and morphologically, nevertheless may produce essential oils of entirely different chemical composition."

Penetration of the Skin

Quite a number of years ago, we recall, the Federal Trade Commission ruled that no product could be advertised as "penetrating" the skin. Rather, the action had to be described as "being absorbed" into the skin. Just how fussy can you get.

The reason that this came to our mind was an accident which occurred in Hood River, Oregon, recently when a fruit tree spray containing tetraethylpyrophosphate spilled from the bottle onto the legs of a six-year-old boy and his heart had stopped beating by the time he arrived at the hospital. The heart beating and breathing were restored but two days later he took a turn for the worse and his condition was critical. Following the accident, firemen, doctors and nurses, operating in four-person teams, worked continuously for seventeen hours in giving artificial respiration before the doctor said he was beyond the danger point.

The Associated Press dispatch which reported this instance says that the liquid "penetrates the skin," and we think their terminology is absolutely correct. Furthermore, we think that it is time that the Federal Trade Commission sat up and took notice so far as skin penetration is concerned.

Cosmetic Tax Reduction

The reduction of the retail excise tax on cosmetics from 20 per cent to 10 per cent as of April 1, has been accepted with gratitude by the industry, although the manufacturers will continue to work for complete elimination of this tax. Manufacturers and distributors feel that there is no reason why cosmetics should be taxed at all. After all, cosmetics are necessities just as much as clothing and food since practically all women must use them if they are to appear normally well dressed.

As to the collection of the tax, the National Association of Retail Druggists has announced that it will continue its fight to have the tax—even at the lower rate of 10 per cent—levied at manufacturing level, because the Association feels that the task of collecting and reporting the tax is too burdensome for the retail drug stores. However, this move will continue to be fought vigorously by the Toilet Goods Association, the National Hairdressers and Cosmetologists Association and the National Beauty and Barber Manufacturers Association. One reason why the latter two associations will fight this move is that the imposition of the tax at manufacturing level would put an end to the exemption from the tax now enjoyed by cosmetics sold for professional use in beauty and barber shops.

However, all three of these associations have a common aim in fighting the shift of collection of the tax at manufacturing level in that they are all determined to fight for complete elimination of the tax. Once the tax was shifted to manufacturing level, Congress and the public would not be constantly reminded of the tax. It is for the purpose of constantly reminding buyers of cosmetics that the federal government still levies a tax on cosmetics, that the Toilet Goods Association has decided to urge manufacturers to continue to quote the prices of their items on a "plus tax" basis. If the tax were shifted to the manufacturing level, the manufacturers, as well as the distributors, would lose creation of resentment against the tax that would cost the industry and the distributors an untold of amount of money to replace.

Roerig Detail Staff Expansion

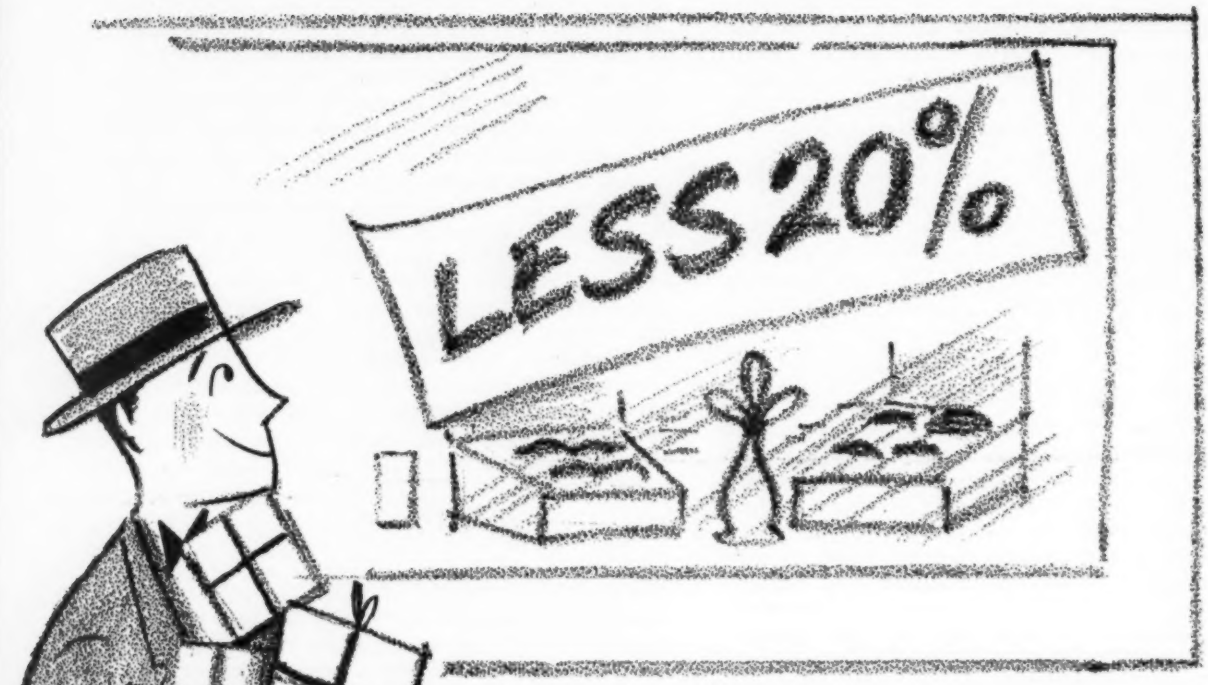
The J. B. Roerig & Co. Division of Chas. Pfizer announces that it has accomplished expansion of more than 150 in its detail, or sales staff, increasing the number of these men from 152 to 400 within the past six months. Roerig Administrative Vice-president Herbert P. Nack says that this increase was necessitated by the expansion of the Roerig line as well as its entrance into the antibiotic field. Roerig specializes in vitamin-mineral formulae, and also markets the new basic, bread-spectrum antibiotic, tetracycline, under the trade name Tetracyn.

James W. Bradley, head of the still-expanding staff, explains that the men are distributed among five divisional offices and further broken down into 30 districts, covering every section of the United States. Divisional offices are located in San Francisco, Houston, Chicago, and two in New York. Allocation of personnel in the 30 districts, says Mr. Bradley, has not meant merely multiplying by more than two the number in each area. For example, in the West Coast division, Roerig had eight men six months ago, but today has 90. Decisions involving such shifts as that, he said, were made only after careful study of population trends, general business trends, and, especially, drug sales trends.

Tyrothricin Dentifrice

The dentifrice market continues to receive new developments, the latest being an over-the-counter antibiotic tooth paste. This is a development of the Pepsodent Division of Lever Brothers—a tooth paste containing tyrothricin. Called Shield, the company says it "is hailed as a major weapon in the fight against tooth decay." The company further says:

"Tyrothricin has been demonstrated as remarkably effective in fighting the bacteria of the mouth which form the acids commonly considered responsible for tooth decay. Because Shield is completely safe for every day use it can be sold without prescription."



Fair Trade's Weakness

From the situation which has prevailed for many years, and particularly since the enactment of the McGuire Act—which was supposed to be the final stabilizing influence—it appears to many that fair trade in this country will always be in a state of turmoil. Certainly, fair trade is being violated widely in this country, and litigation in the courts tends to increase rather than decrease. The courts of the country are far from being of one mind. This is for the reason that many jurists do not consider the control of nonsigners to be right, and also because many jurists do not consider it right to apply the law to a particularly outstanding retailer, when many other smaller retailers are secretly or otherwise also sharply cutting prices.

In a way, fair trade can be compared with prohibition, By this we mean that it seems almost impossible to enforce fair trade completely, and those who would buy at cut prices look upon the price-cutter as their friend much in the manner of buyers of whiskey during prohibition considering the bootleggers their benefactors. There is an inherent desire on the part of a very large number of people to buy at low prices. In fact the ability to do so seems in many instances to make one feel and be regarded as superior. The basic reason for this attitude on the part of a very large part of the population of this country is that these people consider fair trade as an unnatural thing which deprives us of certain of our liberties as much as prohibition did.

When fair trade first came into being it was mainly utilized by the drug and cosmetic manufacturers who were almost completely responsible for its enactment. Book publishers, jewelry manufacturers, and some others, quite promptly took advantage of this new legislation, but the items involved were, for the most part, relatively low-priced. It was when the manu-

facturers of high-priced home appliances began operating under the fair trade laws that the real trouble began. There had always been outstanding cut-price drug retailers who have caused trouble, but never the real basic threat that the retailers of home appliances and other relatively high-priced items caused.

The greatest difficulties in maintaining fair trade on an even keel have occurred since the end of World War II. For a time following the end of the war the public was starved for appliances and a sellers' market existed. Naturally there was no inclination to cut prices under these circumstances. However, following the war, many new manufacturers entered many new lines and companies formed only for war work, became suppliers of consumer hard goods. As time went on, the market for these goods became at least partly saturated, and price competition set in at retail levels. The price competition naturally started with the retailers, newer or less popular brands, but the retailers selling the better known brands eventually had to take notice of the situation.

However, these retailers of the better known brands were all bound by the fair trade laws, as, indeed, were the retailers of many of the other brands. When Macy in New York attempted to meet competition of this sort by cutting prices on General Electric appliances, they were immediately hauled into court. Macy's defense was that numerous discount houses in New York were cutting prices on General Electric merchandise and Macy was merely meeting competition. The court issued an injunction against Macy, but on the proviso that General Electric make a real effort to stop price-cutting on their products wherever it existed in New York.

Within recent years the discount houses have come completely into the open in many areas. In New York, for example, one can walk down the street in some areas of the city and walk right into stores which openly price appliances and other goods far below fair trade minimums. In fact we noticed a store which had no merchandise in the window, because the entire window was covered with a sign which named various appliances and quoted the cut prices on them. We walked into this store and the goods were openly displayed with the prices quoted in the window. Some time back these discount houses were not so open about their price-cutting activities. Most of them were located on upper floors of New York buildings, and in most instances a card or some means of introduction was necessary before one could do business at the low price levels. These sort of places still exist—much after the manner of speakeasies during prohibition—but the practice has become much more open. By and large, cut price practices are largely restricted to certain parts of the cities, some sections being described as inhabited with retailers who "never heard of fair trade."

It is likely that the troublesome condition of fair trade today is the result of the much larger market which exists in this country today than existed before World War II. After all, the sharply increased birth rate which has existed in this country for the last ten or twelve years, together with the increase in the life span which has occurred during the same period of time, has caused an extremely sharp increase in the population of the country. Further than this, the national income of the nation has more than doubled since prewar times and disposable income (income after taxes) has trebled. This largely increased market has brought into existence more types of retailers who specialize in a group of products which formerly made up one department of a large store. And this development has caused greater sensitivity to prices especially as these specialty stores or the larger stores lose business on a particular group of items. Another development of this larger market is the converse of the specializing situation: many stores—grocery stores and super markets, for example—have broadened their lines of products, and this has particularly affected the distribution of drugs and cosmetics.

One might wonder why, when we are concerned only with fair trade as it affects drugs and cosmetics, we pay so much attention to other fields with reference to fair trade, and particularly with references to home appliances. This is because fair trade as the law of the several states or of this nation cannot exist for only one or a few industries. The fair trade laws can be used by the manufacturers of any commodity so long as that particular commodity is in competition with similar commodities. It is unfortunate for the manufacturers of drugs and cosmetics and for the retail druggists who were mainly responsible for the enactment of this legislation and who are very largely responsible for its continuance on the statute books, that this is so. But let no one get the impression that a law that is widely ignored to the injury of those who abide by the law, is going to last.

It is for this reason that manufacturers in this industry, as well as the retail druggists of this country, have cause to worry over the open violation of the fair trade laws by discount houses, appliance stores, super markets, farmer's markets or any other type of retail outlet. This is the reason why the Bureau of Education on Fair Trade is driving so hard to stop the spread and prosperity of the discount houses. The department stores, as well as other retailers, are up in arms about these price-cutting retailers. Manufacturers in this industry and others are coming to realize that if these outlets cannot be controlled, then fair trade might become a thing of the past. For if these outlets are not put out of existence, or at best reduced to an irreducible minimum rather than continuing to mushroom, enforcement of fair trade is doomed, and if enforcement is doomed, then the law itself is finished.

With reference to the discount house, John A. McGuire, former congressman who authored the McGuire Act, and now special Washington representative of the National Association of Retail Druggists, said recently:

"The discount house is a major beachhead for destroying the whole fabric of American retailing. It

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COURTESY GERMAINE MONTEIL

Lipstick Developments

by Harry Hilfer

Lipsticks are perhaps the most generally used of all cosmetic preparations and therefore perhaps the products which ordinarily would be subjected to the greatest amount of investigational work. In my own opinion this has not been the case. There have been companies who have carried out an intensive research program insofar as lipsticks have been concerned but this work has been sporadic and not as continuous as it could have been. There have been a great variety of reasons advanced for this state of affairs but the principal ones seem to be form and the limitations as to color developments for specific use in lipsticks because of the restrictions imposed by the Federal Food, Drug, and Cosmetic Act. I do not mean to imply that the legal restrictions are not necessary, but certification of a new dye is a long and costly process and therefore a definite deterrent against the initiation of projects involving the synthesis of coloring agencies specifically for lipsticks.

The lipstick's form has become standardized after a long period of trial and error innovations which definitely have shown that the present form of a lip coloring is the most acceptable.

I think that if this background is borne in mind, it would be easier to understand the reasons for the developments that have taken place and why their scope is relatively limited.

The indelible lipstick has been on the market for a sufficiently long length of time to be used as the first of the modern lipsticks. It was formulated initially by the introduction of tetra bromo fluorescein (bromo acid) into a base which consisted largely of castor oil, waxes and pigments. Modifications from this form have consisted of additions designed to make application easier and to make the film more or less oily to suit the manufacturer. These were considerable cases of irritation due to its use in the early periods which later were found to be directly proportional to the concentration of bromo acid in the stick. Through the years the concentration was lowered to a point where irritational complaints ceased to be a problem. However, the amount of stain imparted by the stick was also lowered as a result. The word "indelible" as used in describing lipsticks is not the dictionary definition of the word. As the colors incorporated in a lipstick do not impart a stain and, as a matter of fact, are easily removed with the lipstick film, the bromo acids are definite staining agents and do impart a stain not removable by simply rubbing with tissues. The degree of indebility is therefore a function of the "bromo acids." These compounds are not readily soluble in the lipstick base as described, but they are soluble enough to impart a stain. Actually there is reason to believe that an equilibrium exists in any given lipstick system between the amount incorporated and the amount dissolved. The greater the percentage present therefore, the greater would be the amount in solution and the greater the stain.

It has been felt that the greater the indelibility imparted, the more desirable would be the lipstick from a sales standpoint. At least one firm synthesized and developed a series of staining agents which did not possess the irritational properties of the "bromo acids" to the same extent, and as a result this manufacturer was able to produce a lipstick with enhanced staining properties but without the undesirable side effects. These substances are covered by patent and as far as I know limited in use to the manufacturer now making them. I know of no other attempts to improve the product by this means.

There have been attempts to enhance the stain by increasing the solubility of the bromo acids by the addition of agencies in which they are more soluble than they are in castor oil. Most of these solvents, however, are water soluble and the film would, therefore, be more subject to easy removal by foods by simple moistening of the lips. This procedure was therefore thought of as undesirable. Recently, however, a new lipstick has appeared on the market, formulated on this basis, which is so far, seemingly highly successful —so much so that the older established houses have in some cases reformulated their product to incorporate the highly increased method of staining.

At this writing it is difficult to assess this development accurately, since promotional activity has played so important a part in its success. In addition the incidence of irritation as compared to the more standardized form is not known.

This has been the modern history of the lipstick so far, but there are a large number of minor innovations in between. Large numbers of synthetic substances have been coming into prominence as constituents of lipsticks so that it is presently possible to impart almost any desired film characteristics to the stick. Isopropyl myristate, for example, because of its low viscosity is now used as a means to detract from the relatively high viscosity of castor oil. Some of the mono esters of polyhydric alcohols are also in common use because of the increased compatability with the bromo acids offered by the presence of a free hydroxyl group.

Carnauba wax, however, is still the standard wax used to impart high apparent melting point characteristics and beeswax, spermaceti and other natural waxes are still used to impart body as formerly. A lipstick system is a rather complicated physical state, whose properties are primarily due to the nature of the waxes and amount used. There is still room for synthetic waxes with the required thixotropic properties but designed so that the color properties of the stick would be used to their maximum utility.

Many of the colors certified for use were regarded as laboratory curiosities at the time since they were not available commercially. An increasing number of these, however, have become available and are now being used. Noticeable among these has been the tetra bromo tetra chloro fluorescein, capable because of the additional chlorine atoms on the phthallic acid ring, of imparting a greater stain than is possible with tetra bromo fluorescein. I believe that if it were possible to easily manufacture and certify a di bromo tetra chloro fluorescein, it would be readily acceptable since this should stain an orange red to a more substantial extent than does the di bromo fluorescein and, therefore, make possible a greater variation of staining shades with accompanying higher intensity than is now possible.

Production of a lipstick incorporating all the desirable attributes of sheer coloration and also indelible according to the dictionary definition is still far from a "fait accompli." Attempts have been made in the so called liquid lipsticks—which were actually variations of the better known lacquers. They were not successful because of the difficulty of application and because the solvents used were irritating, and, indeed, caused the lips to peel. I do not think that there is any doubt, however, that women for the most part would like a lacquer finish but one as easily applicable as is the present lipstick. This would entail the formulation of a stick containing a volatile solvent, which

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Up-to-Date on Vitamin C PART ONE

By Milton A. Lesser

Last year the scientific world paid special tribute to James Lind. Two centuries earlier, in 1753, he had written his famous "Treatise of the Scurvy." This short book not only helped conquer the scourge of scurvy among seamen but also pointed the way to the discovery of ascorbic acid, or vitamin C.

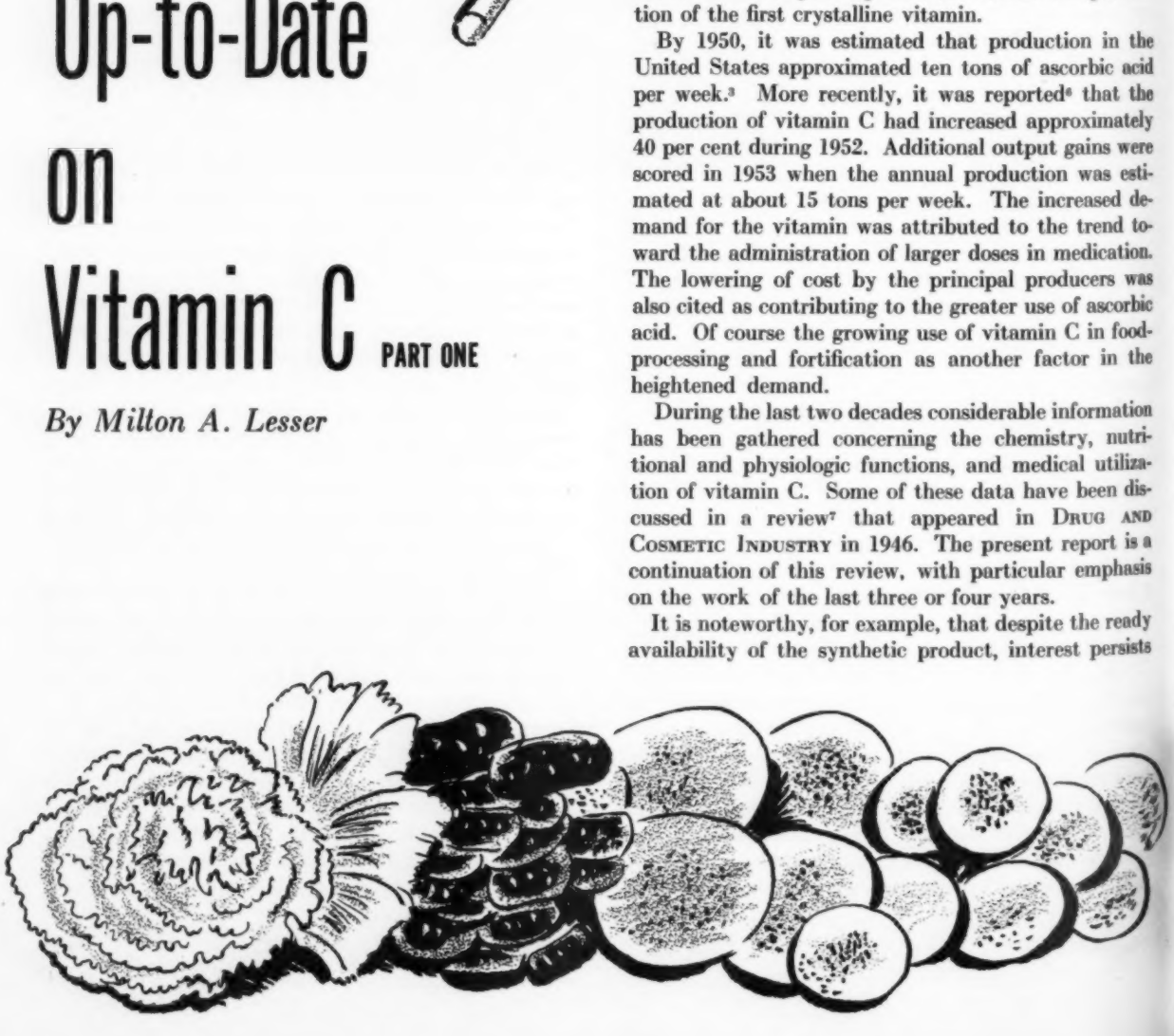
It is an interesting commentary on the thinking of the times that, despite Lind's careful observations and clear statement of his findings, it took more than 50 years for his recommendations to be put into effect. It was not until 1795 that the British Admiralty issued the order that each seaman and marine be issued lemon or orange juice daily. As a result, scurvy disappeared from the Royal Navy, as if by magic. Ironically, Lind died the year before lemon juice was officially approved by the Admiralty.[1,2]

Another century and more was to pass before the true nature of vitamin C was to be realized. Thus, we are reminded by Bauernfeind[3] that as recently as 25 years ago, the chemistry, nutritional values, and food processing qualities of ascorbic acid were largely nature's secret. It was not until 1932 that vitamin C was first isolated from lemons by Waugh and King.[4] In the following year, the vitamin was synthesized by Reichstein and his associates.[5] Soon, large-scale synthesis was developed to permit the commercial production of the first crystalline vitamin.

By 1950, it was estimated that production in the United States approximated ten tons of ascorbic acid per week.[3] More recently, it was reported[6] that the production of vitamin C had increased approximately 40 per cent during 1952. Additional output gains were scored in 1953 when the annual production was estimated at about 15 tons per week. The increased demand for the vitamin was attributed to the trend toward the administration of larger doses in medication. The lowering of cost by the principal producers was also cited as contributing to the greater use of ascorbic acid. Of course the growing use of vitamin C in food-processing and fortification as another factor in the heightened demand.

During the last two decades considerable information has been gathered concerning the chemistry, nutritional and physiologic functions, and medical utilization of vitamin C. Some of these data have been discussed in a review[7] that appeared in DRUG AND COSMETIC INDUSTRY in 1946. The present report is a continuation of this review, with particular emphasis on the work of the last three or four years.

It is noteworthy, for example, that despite the ready availability of the synthetic product, interest persists



in sources of natural vitamin C. In England, the collection of rose hips was begun in 1942 as a war measure to obtain vitamin C. Ten years later, according to Cripps[8], the organized collection of rose hips still goes on in order to produce the National Rose Hip Syrup, which is highly regarded as a rich source of ascorbic acid.

In the United States, at the Western Regional Research Laboratory, Klose and his colleagues[9] developed a method for obtaining ascorbic acid from waste green walnut hulls in an over-all yield of from 25 to 50 per cent. However, economic analysis of the extraction process indicates that the method is marginal unless other use could be made of the equipment during the off-season.

Of interest in this connection is new data on the biological synthesis of vitamin C. An important advance in the knowledge of how plants make ascorbic acid from glucose was reported in 1953 by a team of British investigators.[10,11] If this process can be duplicated on a commercial scale it could lead to a cheap method for manufacturing vitamin C.[12]

However, other methods for synthesizing vitamin C have been developed, in addition to those currently in use. Thus, the process worked out by Salomon and his colleagues[13] permits a rapid and convenient synthesis of ascorbic acid; giving an active product in good yield from commercially available sorbitol.

In addition to the production of ascorbic acid, investigators have turned their attention to the preparation of various ascorbates. For example, by a process developed by Fox and Creighton,[14] pure, stable, crystalline sodium ascorbate is obtained by treating ascorbic acid in a mixture of methanol and water with sodium bicarbonate, under an inert gas.

This salt is extensively employed in the preparation of parenterally administered solutions. According to Ruskin,[15] the oral administration of sodium ascorbate may be preferable in cases where gastric irritation may result from high dosages of free ascorbic acid such as might be used in the treatment of allergic disturbances.

This worker first prepared iron ascorbate for therapeutic use in 1933. Some years later, in collaboration with Merrill, he[16] presented a detailed report on the chemistry and physiologic action of this compound, which may be given intravenously as a valuable aid in cases of anemia associated with subnormal levels of vitamin C, such as scurvy, duodenal ulcer and nutritional anemia.

Calcium ascorbate is also available commercially for use in tablets, capsules and ampoules. The salt is well tolerated by the gastrointestinal tract and is readily absorbed by the tissues.

Mention should also be made of ascorbyl palmitate, a fat-soluble monoester derivative of ascorbic acid. This compound has a number of valuable applications as an antioxidant in non-aqueous food, drug and cosmetic preparations. Its most important use is as an antioxidant to prevent rancidity in fatty and oily foods. Ascorbyl palmitate has been suggested as a source of vitamin C for augmenting vitamin preparations, especially those of the A and D types, which are formulated from carriers of a fatty or oily nature.[17]

Advances have been made toward improving the stability and compatibility of vitamin C. This is particularly important with respect to ascorbic acid solutions which are adversely influenced by such factors as atmospheric oxygen, pH, the presence of copper, iron and manganese, heat and light. Thus, in discussing the preparation of stable five per cent solutions of ascorbic acid in ampoules, Gellerova[18] observed that the decomposition of such preparations appears to depend upon other factors besides the concentration of oxygen in the solution. Complete removal of the oxygen by flushing with carbon dioxide cannot be attained readily, but a residual content of 0.18 mg. per liter is low enough to permit the production of stable ampoule preparations. Addition of stabilizers, such as 0.005 per cent thiourea or 0.75 per cent sodium chloride permits storage for 12 months. The effect of heat on the stability of the solution is smaller, the lower the residual oxygen concentration. At low oxygen levels, in a carbon dioxide atmosphere, the solutions show almost no decomposition during sterilization for 30 minutes. Storage in the dark is not necessary.

Another approach to the problem is offered in a British patent.[19] Here it is specified that ascorbic acid in aqueous solution can be stabilized for storage or distribution by the addition of glycerine to the extent of not less than 50 per cent of the total volume. The stabilized solution is suitable for incorporation in medicines or foods.

Of kindred interest are the observations of Bartilucci and Foss.[20] They found that ascorbic acid is most stable in high concentrations of propylene glycol with distilled water, glycerine or sorbitol (Sorbo), and a mixture of glycerine and sorbitol. The optimum pH for stability of ascorbic acid was found to be above 6.0 but below 7.0.

These observations were made during a study of the stability of vitamin B_{12} and ascorbic acid in liquid

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Cosmetic Aerosols

CONDENSED FROM A FORTHCOMING BOOK

by Wm. R. Keithler

As evidenced by the wide sale and effective distribution of aerosol products, the public has taken a tremendous liking to them. This is probably for one of two major reasons—either because the product packaged as an aerosol does the job it was intended to do better than the same product packaged in glass or cans, or else because the consumer likes the convenience of merely pressing a button.

An aerosol may be defined as a dispersion of very fine particles in air. Most of the products marketed as true aerosols fall into categories other than cosmetics. Two other varieties of aerosol products are generally used for cosmetic packaging, namely, foam products, such as shave cream; and wet sprays, as exemplified by hair net sprays. These two types fall into the same general class as those which are defined at the head of this paragraph; however, they are not true aerosols.

Space sprays and deodorants are excellent examples of the true aerosols. In these products, a closed container equipped with a tube or outlet and a valve is filled to about 70 per cent with the active ingredient. A propellant, liquefied under refrigeration, is added to this. Part of the refrigerant is either dissolved or dispersed in the liquid and some forms a gas above the liquid level.

When the button is pressed or the valve opened, the vapor pressure of the gaseous propellant forces the liquid up the tube and through the outlet. At the same time the propellant, which has dissolved in the liquid, instantly changes to a gas; and, in changing so rapidly from liquid to gas, bursts the liquid into minute particles which remain in suspension for a indefinite period.

Foam aerosols differ from the true aerosol in that they contain less propellant with a higher vapor pressure. Actually, the active ingredient is emulsified with the propellant; and, when the button is pressed, this emulsion is released as millions of tiny bubbles which rapidly expand, due to the propellant particles, and become a copious lather.

The third type of aerosol, called a wet spray, operates essentially the same as the space aerosol. Less propellant is used, and they operate at a lower pressure than the true aerosols. The particle size is much larger than in the space spray.

Du Pont's Freon 12 propellant, dichlorodifluoromethane was the first used, but having a pressure of 70 lbs. per sq. in. gauge at 70° F. required a heavy cast iron bomb. It was found that mixtures of the propellant with various gases would yield another mixture possessing lower pressures, so that it was possible to package aerosols in cheaper containers and also meet the U.S.D.A.'s and Interstate Commerce Commission's standard.

The I.C.C. regulations stipulate that a compressed or liquefied gas is one which exerts a total pressure exceeding 25 lbs. per sq. in. at 70° F. and is subject to regulation. Generally, the I.C.C. requirements exempt those with products meeting the following specifications

from packaging, labeling, and marking requirements.

1. Nonrefillable container charged with a solution and nontoxic, noninflammable gas or gases.
2. Capacity not to exceed 16.6 fl. oz.
3. Pressure not to exceed 40 lbs./sq. in. gauge at 70° F.
4. Contents must not completely fill container at 130° F.
5. Prior to shipment, container is heated to 130° F. Leakage or defects should be absent.

There are two methods currently used in filling aerosols, the pressure method and the cold method. As the name implies, pressure filling involves filling of the cans at normal room temperatures under pressure, using specially designed, pressurized equipment. Cold filling, on the other hand, is done by refrigerating the propellant and loading the container with the liquefied gas.

The field of propellants is rather limited, there not being more than a dozen or so now enjoying even the slightest use. A list of the more popular ones consumes very little space.

Trade Name	*Chemical Name*	*Manufacturer*
Freon 11	Trichloromonofluoromethane	du Pont
Freon 12	Dichlorodifluoromethane	du Pont
Freon 21	Dichloromonofluoromethane	du Pont
Freon 22	Monochlorodifluoromethane	du Pont
Freon 113	Trichlorotrifluoroethane	du Pont
Freon 114	Dichlorotetrafluoroethane	du Pont
Genetron 11	Same as Freon 11	General Chemical
Genetron 12	Same as Freon 12	General Chemical
Genetron 101	1,1,1-difluorochloroethane	General Chemical

All in all, it is quite a large job to manufacture an aerosol product. Aside from the mechanical and engineering aspects of the problem, chemical compatibility and corrosion of either the valve or container by the formulation must be considered. Stability and shelf tests must be instituted to see that the formulation does not hydrolyze or react in any way so as to increase pressure. They must be tested for their effect on the propellant and vice versa. Finally, the formulation must be tested to ascertain what type valve is most advantageous to use with respect to the efficiency of formulation's functions.

A sample formula for an aerosol-packaged shampoo is given as follows:

SHAMPOO

Sodium Lauryl Sulfate Paste	40 per cent
Polyethylene Glycol 400 Distearate	4 " "
Zinc Stearate	1 " "
TEA Lauryl Sulfate	1 " "
Water	54 " "

The above formula is pressurized with the following mixture:

Freon 12	50 per cent
Freon 11	50 " "

90 per cent Shampoo
10 per cent Propellant

The end product has a pressure of 41 lbs. per sq. in. gauge and extrudes an excellent shampoo lather.

Pressurized shaving creams are becoming more and more popular with the consumer. Their ease of use, speed, and effectiveness account, at least in part, for this popularity boom. Probably one of the most important reasons for their effective sale is the fact that shavers can have brush type lather without the use of a brush. Strictly speaking, novelty is not the reason behind the current popularity of aerosol shave creams.

Essentially the same propellants are used in the formulation of this product as are used in the formulation of pressurized shampoos, that is, "Freons," and "Genetrons." However, usually only one or a mixture of three gases are used in shave creams. These are Freon 11, or Freon 114, mixed with Freon 12 in near equal proportions, and Freon 12 used alone. A mixture of Freon 11 and Freon 12 (50:50) is more effective and stable than is Freon 12 alone. This same statement applies to the Freon 114. It is also used admixed with Freon 12.

The formulation of a pressurized shaving cream is no easy matter. The ingredients must be very carefully controlled. Manufacturing the product is not simple either; and, for this reason, most small cosmetic houses buy the finished shaving creams from a reputable private label house. It is very expensive to plunge headlong into the manufacture of any pressurized product.

Serious problems accompany the manufacture of an aerosol shave cream, and one of the most important is that of corrosion. Water, of course, is a necessary part of shaving cream, whether brushless or lather; and water, especially in the presence of air or dissolved oxygen, is notoriously corrosive. This problem of corrosion can be met in any of several ways. The most common are either adding a corrosion inhibitor or buffering to a certain pH. The former method is most effective, and the compounds most used are inorganic and organic nitrites. Some of these nitrites prevent corrosion in the vapor phase, while others protect the container from the cream.

Cationic wetting agents must be avoided, as they are also notorious as far as corrosion is concerned. The anionics are slightly less corrosive than the cationics, while the non-ionics are the least corrosive. Since many of the newer types of shaving creams, especially brushless, contain one or more synthetic wetting agents for the purpose of softening the beard and rendering the cream dispersible, it is very important to choose the agents only after careful testing and thoughtful deliberation.

The container itself is a determining factor as far as corrosion is concerned. The product must be tested in the container for corrosion, which may present itself in any of several ways. The container may be discolored; it may be pitted, or there may be actual rust spots. Apart from these characteristics, the cream may also be affected by discoloration, or flecks of metal from the container. All in all, an extensive testing program is indicated before a pressurized aerosol shaving cream, or for that matter, any pressurized product, can be manufactured. *(Continued on page 740)*

A.P.M.A. Meeting

A change in the set-up of the officers of the Association was made by the American Pharmaceutical Manufacturers' Association at its recent annual meeting held at Boca Raton, Florida. The change consisted of the election of a "president-elect" in addition to the other officers of the Association. This means that the president will serve only one year in office in the future, as the president-elect will automatically become president after one year.

Robert A. Hardt, vice-president of Hoffmann-La Roche, was elected president, succeeding Michael Francis Charley, and Kenneth F. Valentine, president of Pitman-Moore Company, was elected president-elect. The three regional vice-presidents elected are: Francis C. Brown, president of Schering Corporation, Eastern vice-president; William B. Graham, president of Baxter Laboratories, Central vice-president; and Jack schopflin, executive vice-president of E. S. Miller Laboratories, Western vice-president.

S. Barksdale Penick, Jr., president of S. B. Penick & Company, was reelected treasurer; Dr. J. O'Neill Closs was reelected executive vice-president and secretary; and Charles Wesley Dunn was renamed general counsel. Besides retiring president Charley, the following were elected to three-year terms on the Board of Directors: Dr. John W. Bradley, president of Brayton Pharmaceutical Company; O. J. May, executive vice-president of Smith, Kline & French Laboratories; John J. Powers, Jr., senior vice-president of Chas. Pfizer & Co.; and John J. Toohy, executive vice-president of E. R. Squibb & Sons.

New members elected to the Association at the meeting are Mead Johnson & Co., elected to active membership; Sunkist Growers Products Department and the Academy of General Practice, both elected to associate membership.

In his address at the opening session, Retiring President Charley pointed out that "derogatory promotion tactics which injure the industry in general are ultimately injurious to individual firms within the industry and particularly to those firms which indulge in such practices or initiate them." He predicted that such promotion practices will be eliminated by economic necessity.

Mr. Charley pointed out the necessity for the pharmaceutical industry to work hand in hand with the practicing pharmacists in creating a program of public education to correct the erroneous impression that prescription prices are too high. "We as manufacturers indirectly are placed in the unfortunate position of selling something the customer didn't want to buy in the first place," he said.

With respect to the twin problems of duplication and substitution, Mr. Charley said:

"It is my belief that the problem of duplication . . . will, in large measure, be solved by economic necessity. In other words, I feel that the competitive situation will be such during the next decade that few, if any pharmaceutical firms will be able to afford the luxury of frank and outright duplication of specialties. There are and always have been border-line cases where a certain amount of duplication is required. The future, however, will be not bright for those who indulge in bold and ill-advised forms of duplication.

"It is my belief that the profession of pharmacy will, to a large extent, police itself as far as substitution is concerned. The flagrant violators will be sought out

Robert A. Hardt, vice-president, Hoffmann-La Roche, Inc., elected president of the American Pharmaceutical Manufacturers' Association, March 31, 1954.

and prosecuted to the advantage of all conscientious, professional pharmacists and pharmaceutical manufacturers who will win in their desire to stop this practice."

Charles Wesley Dunn, general counsel of the association, told the meeting that Congress will probably defer controversial amendments of the Federal Antitrust Law until the Attorney-General's National Committee to Study the Antitrust Laws had made its report. But, he added, Congress may previously amend the Sherman Act to increase its maximum criminal fine from $5,000 to $50,000. This amendment was passed by the House and the Attorney-General wants it.

With regard to the Federal Food, Drug, and Cosmetic Act, Mr. Dunn reviewed the pending food standards and pesticide residue amendments; and he explained their great practical significance to pharmaceutical and associated chemical manufacturers. He pointed out that the latter amendment adds two new safeguards to prevent misadministration. One safeguard is the appointment of ad hoc scientific advisory committees selected by the National Academy of Sciences, to advise the government on its administration of this amendment to establish safe tolerances for pesticide residues in natural foods. The other safeguard is to require that the court review the entire record of an administration hearing resulting in an order against a pesticide residue, including the ad hoc advisory committee's report on it, when such order is judicially challenged. Mr. Dunn also explained the proposed O'Hara amendment to regulate the use of new chemical additives in food, by requiring a pretesting adequate to establish their safe use; and by placing their use under a government control similar to that imposed by the pesticide residue amendment.

Mr. Dunn noted that the organized food industry has approved the principle of a compulsory safety pretesting of new chemical additives in foods; but that he had not yet had time to study the O'Hara amendment to implement this principle.

U. S. Narcotics Commissioner Harry J. Anslinger told the meeting that there is a great deal of current confusion over the narcotics problem. Pointing out that during recent years there have been three congressional groups investigating the mounting narcotics menace, he said that none of the investigations have turned up any evidence that the U. S. pharmaceutical industry was in any way responsible for the rise in narcotics addiction.

However, he said, "The pharmaceutical industry in Italy, unfortunately, does not have a similarly fine record. In fact, starting of the 1950 wave of heroin addiction among the teen-agers was largely due to diversion of the narcotic from regular trade channels by several Italian drug houses."

Commissioner Anslinger added that "substantial quantities of heroin are still coming out of China. Japan is flooded with the narcotic, and West Coast states of this country are getting their share."

George Bugbee, new president of the Health Information Foundation, was introduced at the meeting by John G. Searle, president of G. D. Searle & Co., and chairman of the board of the Foundation. Said Mr. Bugbee:

"The Foundation has made some important contributions already in its short life toward stronger organization and financing of our voluntary health facilities and services. After twenty-eight years in the hospital and health field, I am convinced that the voluntary approach to the distribution of health services is sound. The vitality implicit in that system can only be maintained and supported as we meet the health needs of the individual citizen in an effective manner. This is not the work of one person or of one industry alone, but of all those working in the health field. In cooperation with medicine, hospitals, health organizations and prepayment agencies, H.I.F. can continue to make substantial contributions."

The Office of Vocational Rehabilitation of the U. S. Department of Health, Education and Welfare was honored by presentation by Mr. Charley to Mary Switzer, director of the bureau, of the 1954 Annual Award. The Award was given "in recognition of the great leadership, expert technical advice, and assistance given by this agency and its distinguished and dedicated Director to the end that many thousands of handicapped persons have been restored to useful lives, given economic independence, with the dignity that is work instead of desolation, and spared untold suffering, both physical and mental. All of which would otherwise not have been accomplished."

Stating that for the past three years more than 60,000 disabled people have been rehabilitated annually through the program, Miss Switzer said that President Eisenhower has projected a five-year program which would increase the capacity of the Federal-State program from its present annual 60,000 rehabilitations to 70,000 in 1955, and on up to 200,000 in 1959. Of the men and women treated, Miss Switzer says they "have presented practically every physical and mental impairment which afflicts the human race. They included the more obvious disabilities, such as paraplegia, hemiplegia, arthritis, and blindness. Many others had hidden impairments—the cardiacs, the tuberculosis, and the emotionally ill. But they all had two things in common—a disabling condition which kept them from getting or holding a job, and a determination to do something about it."

Industrial development of foreign countries aided and inspired by the United States is more vital to world peace and prosperity than treaties and political slogans, the meeting was told by John J. Powers, Jr., senior vice-president of Chas. Pfizer & Co. Discussing the recommendations of the Randall Commission (Commission on Foreign Economic Policy) Mr. Powers suggested that U. S. trade policies be related to expansion of world trade as a factor for peace rather than on the more limited objective of closing "the dollar gap."

Mr. Powers nevertheless stated that in many respects the Randall Commission has made a contribu-

(Continued on page 736)

Sixty Years of Service...

Frederick Henry Leonhardt, chairman of the board and past president of Fritzsche Brothers, was honored on the occasion of his sixtieth anniversary with the firm by a dinner attended by over 400 guests and associates at the Waldorf-Astoria's Starlight Roof on April 17. In addition to executives and employes from both the main office and the Clifton plant, those in attendance included the sales representatives and all 10-year employes from the company's nine U. S. branch offices, from its Canadian affiliate, and from its Mexican agency. Many of the guests and most of the representatives were accompanied by their wives.

As Mr. and Mrs. Leonhardt approached the dais, the orchestra played Hail to the Chief. Following prolonged and enthusiastic applause, all joined in singing the Star Spangled Banner, after which Fritzsche President John H. Montgomery—who later apologized for presuming to take over the function so long handled by Mr. Leonhardt, that of presiding over all Fritzsche gatherings—introduced Dr. M. Eugene Flipse, Pastor of the Community Church of Douglaston, Long Island, who pronounced the invocation.

Again taking the floor, Mr. Montgomery, with a few well chosen words, presented Mr. Leonhardt with a fine oil painting of the latter executed by Artist Louise Altson, an anniversary gift from all Fritzsche employes, which Mr. Leonhardt graciously accepted. Mr. Montgomery then spoke of the many fine qualities possessed by the honored guest and the pleasure it had been working with him for so many years. He referred also to the fine moral and material support he had given both his church and his community. He drew particular attention to the fact that Mr. Leonhardt's 60th anniversary was unique in that he was the only one in Fritzsche Brothers who had ever attained that distinction, also that he, alone, could hold that distinction indefinitely because of his generosity in providing a retirement plan for everyone in Fritzsche Brothers, except himself, which practically insured that no one would ever work with the firm that long again. Mr. Montgomery also read several congratulatory messages which had been received just before the cermonies began. One was a warm message from Schimmel & Company, the famous Leipzig chemical firm that gave Mr. Leonhardt his first job prior to joining Fritzsche Brothers in 1894.

Vice-presidents H. P. Weseman, Dr. Ernest Guenther, and Joseph A. Huisking were called upon in that order and each spoke movingly of their long and pleasant associations with the honored guest. Mr. Wesemann voiced the feeling of all when he expressed the "most earnest hope that Mr. and Mrs. Leonhardt may jointly and in the best of health enjoy many, many more anniversaries of this day." Dr. Guenther expressed his profound gratitude for the unique opportunities for freedom and research that had been afforded him and his co-workers under Mr. Leonhardt's encouraging and benevolent guidance. Mr. Huisking spoke from the heart and said: "There could be no more appropriate time than this Holy Easter Season to offer a prayer to our Heavenly Father in thanksgiving for sparing Mr. Leonhardt to us to celebrate this wondrous occasion, and that he be spared to his family and to us for many more years during which he will continue to be blessed with good health. I am sure that all of us when we attend the churches of our denominations tomorrow will have this thought uppermost in our minds."

Miss Mary G. Neary, Secretary to Mr. Leonhardt for many years, contributed a lighter note when she observed that their combined service with Fritzsche totaled just 100 years.

As the last course was being served, Jim McNamara, retired dean of the sales staff, was called upon to speak as was Charles Schneider, next oldest representative in point of service, who presented Mr. Leonhardt, on behalf of the firm's salesmen, with a gold-framed, beautifully engrossed testimonial surrounded by the pictures of all 27 active men.

As a gift from Mr. Leonhardt, every person present received a handsome gold-banded Schaeffer pen and pencil set of the very latest design. Each guest also received a handsomely bound booklet containing a reproduction of the portrait presented to Mr. Leonhardt and a brief biographical sketch of his business career. Compiled and published without the prior knowledge or sanction of the subject involved, it constituted one of the

(Continued on page 743)

The Cosmetic Tax

The effect of the size of the retail excise tax on cosmetics, perfumes, and other toiletries is about to be determined. As is well known, this tax was cut from 20 per cent to ten per cent on April 1. It is a foregone conclusion that this tax reduction must be beneficial to the sales of cosmetics and similar items, but the question is to what extent? The tax has been generally thought to have the greatest adverse effect on sales when cosmetics are purchased as gifts. The reason for this is that a person generally has in mind a particular amount of money which he or she will spend for a gift for a particular person. Naturally, in buying the gift, the purchaser wants to get as much for the money as possible. Therefore, if the type of product he had in mind were taxed heavily, he would switch to some other type of product.

This same sort of reaction is bound to exist to some extent, even though the tax has been cut in half. However, on a $5.00 item, the reduction of the tax from $1.00 to 50 cents is quite considerable, and the buying resistance should be markedly lessened. Similarly the saving is quite noticeable on a $10.00 item when the tax is cut from $2.00 to $1.00, or on any price throughout the entire price range. These illustrations tend to show that resistance to the purchase of cosmetics and perfumes as gifts should be materially lessened as a result of the tax cut. Similarly, of course, purchasing

of cosmetics and perfumes for consumption by the buyer should also be materially lessened. However, the resistance to buying for use and buying for gifts cannot be compared for the reason that women must purchase for use while they do not have to purchase for gifts.

But people purchasing for consumption will be more likely to purchase either greater amounts or more expensive products if the cost to them is less. Therefore, there should be some improvement in sales of products for use by the purchasers. But under conditions as they exist today with high prices prevailing for necessities of all kinds, it is certain that saving in tax on cosmetics to consumers will not be very largely put into the purchase of greater amounts of cosmetics or in higher priced cosmetics.

It must be considered that cosmetics today are being treated as necessities by both manufacturers, distributors, and consumers, more than ever before. The great expansion in the cosmetic industry of recent years has resulted largely from greater availability of mass produced products. The extension of cosmetic distribution to the grocery stores and other outlets at moderate prices. Cosmetics today are more in the nature of commodities than they ever were before. The largest manufacturer of cosmetics exclusively, while not treating their products as commodities, has found out that availability of their products to the consumers pays off handsomely. This manufacturer sells its products exclusively through agents who call at the houses of the purchasers. The rise in sales of this company—which is still continuing—is phenomenal in the cosmetic industry.

Consideration of the products as true necessities, the bulk of which are bought and sold at truly competitive prices through all manner of outlets, points up the fact that these products should not be taxed at all. The ten per cent Federal retail excise tax is absolutely unjustified, and manufacturers and distributors should continue to fight hard for the complete elimination of the tax. Therefore, all steps that can bring the resentment of manufacturers, distributors, and purchasers against this tax should be taken so that the members of Congress will strongly feel this resentment.

It is for this reason that the collection of the tax should be kept at the retail level and not transferred to the manufacturing level as is the desire of some retail interests. The National Association of Retail Druggists is one group which is very strongly pressing for the transfer of the collection to the manufacturing level. This is merely to save the retail druggists the work of making these collections and reporting them. Some other retail interests are also of the opinion that collection of the tax should be transferred to the manufacturing level for the same reason.

However, the manufacturers and some others are strongly opposed to any such transfer in the collection of this tax. This is for the reason that if the tax is collected at the manufacturing level, it becomes a hidden tax. Under such circumstances, the purchaser of cosmetics will not know the amount of tax she is paying on her purchase, and in most instances she will not even know that a tax is being paid by her. If this state of affairs continues for a very long period, purchasers will no longer have any knowledge of the fact that there is a tax on cosmetics, and resentment against the tax will have completely disappeared so far as the consumers are concerned. The only ones who will then have a real interest in fighting the tax will be the manufacturers themselves, and all their protests against the tax will be shrugged off by legislators and by the public at large as a selfish interest. The public at large will be of the opinion that the manufacturers can afford to pay the tax, never realizing that it is the people who buy cosmetics who are actually paying it.

The only way to bring about elimination of the tax is to wear down the legislators by every means at the industry's command. After all, legislators have no hesitation in enacting any tax so long as there is no serious resentment against it. In fact, these are the kind of taxes which legislators are constantly seeking, and they thank their lucky stars when they find one.

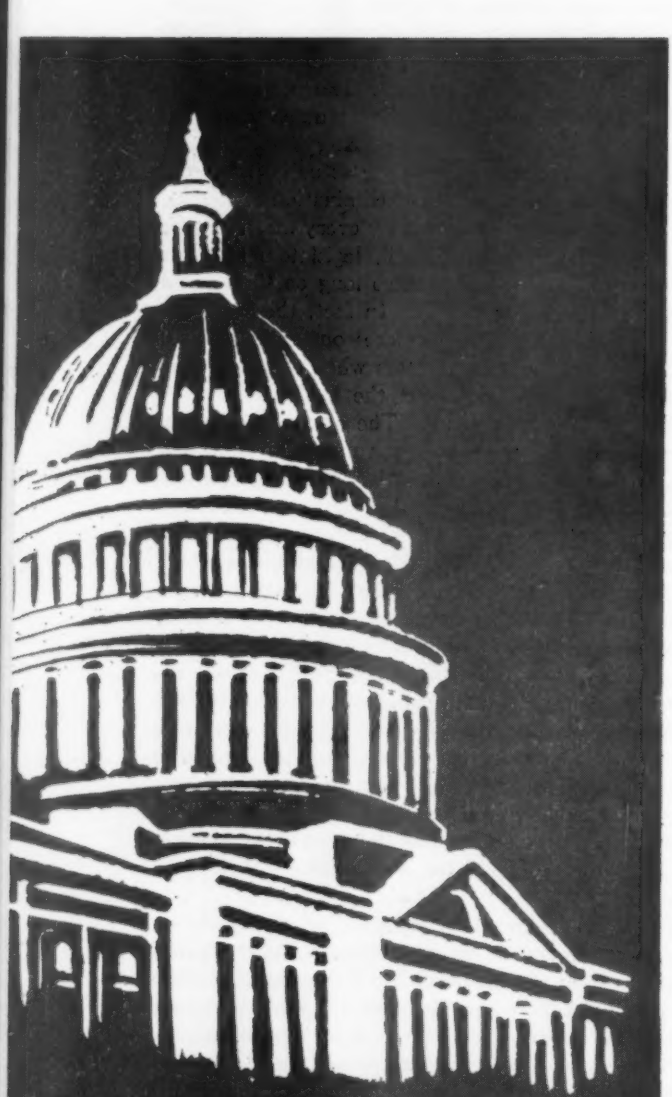
There is nothing fair about the methods used by legislators in enacting taxes. The question generally before them is: There is so much money to be raised by taxation, where can we get it? When at the last minute before the revenue bill is to be adopted, the legislators find they are short a certain amount of money, they merely look around for amounts which will make up this shortage. And in selecting the taxes to be levied to make up the shortage, they try to pick, if possible, ones which will not incur too much resentment. They know full well that if there is strong resentment against the tax, this is not only going to hurt them politically, but that also the tax will have to be repealed the following year and replaced by something else. And they are not certain that the tax with which this one is replaced will not bring strong resentment from another large segment of the population, causing the legislators to embitter still more of their constituents.

This is really the only language which legislators understand because it threatens their political life and the political life of their party which is essential to their welfare. For this reason, the cosmetic industry should foster every move which will build up popular resentment against this tax, and they should also fight hard against every move which would tend to lessen this resentment.

Following this line of thought, the Toilet Goods Association recently took a further step to prevent, as far as possible, any lessening of resentment against the cosmetic tax, even though the rate of the tax has been cut in half. Some time back the T.G.A. expressed itself very strongly as being opposed to any attempt to shift the collection of the tax from the retail level to the manufacturing level. But more recently, in fact after the tax was reduced, the T.G.A. took action on advising its members to continue to quote their prod-

(Continued on page 728)

F.T.C. Approves Area Pricing



If anyone had doubted that we have a different Federal Trade Commission under the present administration than we had under the recent Democratic administrations, his doubts were finally dispelled late last month in the Commission's action in the General Foods case involving pricing of Certo and Sure-Jell. Here was an instance where the Commission, in dismissing the complaint against General Foods, apparently refused to follow two decisions of the former Commission, one of which decisions was upheld by the U. S. Circuit Court, and the other of which was upheld by the U. S. Supreme Court.

The charges against General Foods were that they had reduced the prices of certain of their products in one area for the expressed purpose of damaging competitors in that area so that one or more of these competitors could not expand nationally and become important competitors of General Foods in the products they made.

As a result of the three to one decision of the Commission (one commissioner not participating), it would appear to be legal under the present Commission to indulge in these tactics, even though the aggressor might approach a point at which he held eighty per cent of the market. The Commission said that injury to a competitor must be proven, and the Commission found that injury did not exist so long as the smaller manufacturer's sales went up even though his percentage of the market declined sharply.

The case against General Foods involved the pricing for retail sale of Certo and Sure-Jell, the first of which is a liquid pectin, and the second of which is a powdered pectin, both used by the housewife for making jellies and jams. Patents purchased by General Foods in 1929 gave General Foods a virtual monopoly in the field of liquid pectin until the patents expired in 1939 and the appearance of powdered pectin on the market. At that time, General Foods had 75 to 80 per cent of

the liquid pectin business and 40 per cent of the powdered pectin business. In the western territory it had 50 per cent of the liquid and 25 per cent of the powdered pectin business. In other words, General Foods had some real competition in the western part of the country.

From 1940 until the end of 1947, General Foods put into effect certain "deals" in the western territory, being roughly that portion of the country west of the Rocky Mountains. Under these deals, wholesalers, jobbers, and retailers were authorized to sell one additional bottle of Certo, for example, for three cents when the customer bought two bottles at the regular price. In other words, Certo sold in the western territory at lower prices than it sold for in the rest of the country. And apparently, this step was taken as a means of increasing business for the General Foods' products at the expense of these competitors.

The Commission had two previous cases, also based on the Robinson-Patman Act as this one was, which involved questions of ths kind. One was the Morton Salt case, upheld by the U. S. Supreme Court in 1947. With reference to this case the Commission quoted from the 1948 Policy Statement of the Federal Trade Commission as follows:

"However, there are strong reasons why the concept of injury adopted by the court in the Morton Salt case should not be applied automatically to discriminations arising under geographic pricing systems in which purchasers paying different prices are differently located and the price differences generally diminish as the distances diminish between purchasers' locations. In these circumstances competition between purchasers paying significantly different prices may occur in quite limited areas or only along the fringes of trade territories. Seeming advantages in price may be materially affected by disadvantages of location. These and other considerations make it clear that in geographical price discriminations inferences of injury to competition drawn merely from the existence of price differences between purchasers who compete in some degree would have no sound basis. The minimum determination of injury should be based upon ascertained facts that afford substantial probability that the discriminations, if continued, will result in injury to competition."

The other case was that of Moss which was upheld in 1945 by the U. S. Circuit Court of Appeals for the Second Circuit, the Supreme Court refusing to review. With reference to this case the Commission commented:

"That case involved discriminations in price under Section 2(a) and the claimed injury was in the primary line, that is, to competitors of the seller. The Commission made findings of fact which set out eight instances in which respondent had discriminated in price. In each case, there was a finding that such discrimination resulted in substantial injury to respondent's Competitors and tended to create a monopoly. Thus, the question of which party has the burden of proof is not involved. The court, however, stated that where a discrimination was shown, the burden was on anyone making such discrimination to show that injury to competition did not occur. . . .

"The Federal Trade Commission has very generally held, that under Section 2(a), counsel supporting the complaint has the burden of proof to establish the necessary competitive injury. Where that burden has not been sustained, the cases have been dismissed."

According to the Commission, Herbert T. Leo, president of the Mutual Citrus Products Company of California, after testifying that the General Foods' deals had adversely affected his business, revealed on cross examination that his sales, which were 98,874 dozen packages in the year immediately preceding the deals, advanced figures over 400,000 dozen packages, being 495,113 in 1948, 428,423 in 1949, 372,052 in 1950, and 387,215 for nine months of 1951. He also testified that lower sales in 1946 were due to sugar rationing rather than to respondent's deals, and that increased sales in 1948 and 1949, after the deals ended, were due to the failure in quality of the product of a third competitor. It was also shown that the deal price of General Foods was generally a little above Mutual Citrus Products prices.

While figures were not available to show General Foods' position in the western territory during the years of the deals, the percentage of the national pectin market held by Certo and Sure-Jell was given as follows: 1938, 67.2; 1939, 62.2; 1940, 67; 1941, 69.4; 1942, 74.4; 1943, 72.6; 1944, 74.2; 1945, 80.2; 1946, 80.5; 1947, 64.6.

In refusing to follow the two cases already upheld by the courts, and, in effect, overruling these courts, the Commission was split in its decision. Three of the commissioners, Chairman Edward F. Howrey, Lowell B. Mason, and John W. Gwynne, concurred in the majority decision; Commissioner Albert A. Carretta did not participate, and Commissioner James M. Mead wrote a lengthy and blistering dissent.

To quote from Commissioner Mead's dissent:

"The purpose of General Foods in offering these "deals" in the western states was frankly aggressive. As stated by the attorney for General Foods in his able argument before the Commission:

" 'We are interested in getting some more business in the 11 western states, that is the reason we did it.'

"A memorandum obtained from the files of the respondent (General Foods) and dated November 30, 1942, describes the purpose of the deals as follows:

" 'I also am of the opinion that had we not made it tough enough for M.P.C. (Mutual Citrus Products) as we did the last three years, they would have spread eastward at a much faster rate than they did and we would now be facing some pretty tough competition in the Middle west, the high Sur-Jell per capita market. . . . The management may rightfully ask how much longer it is going to be necessary for us to continue the deal operation in the west. I cannot answer that question. The record, however, would indicate that if we cease to be competitive in the west, we will very likely lose ground rapidly to M.C.P. and other local

(*Continued on page 738*)

"Freon" Propellents Put th

Pressure remains constant until container is emptied

The propelling force in the vast majority of aerosol-product formulations now on the market is one of the various Du Pont "Freon"* fluorinated hydrocarbon propellents. There are over 25 different "Freon" propellents now used in aerosol products.

"Freon" propellents provide a source of constant pressure until the entire liquid content of the container has been discharged. When the volume of liquid in the container is decreased, as in Figure 1 below, the volume of vapor space is increased. When this occurs, a small amount of the liquefied propellent vaporizes to fill the enlarged space so that the pressure inside the container remains the same.

"Freon" propellents designed to meet specific needs

While "Freon" propellents vary in compatibility, solubility, and other qualities, their basic characteristics remain the same: all are nonflammable, nonexplosive, and virtually nontoxic. The propellent may be tailored (by mixing individual "Freon" com-

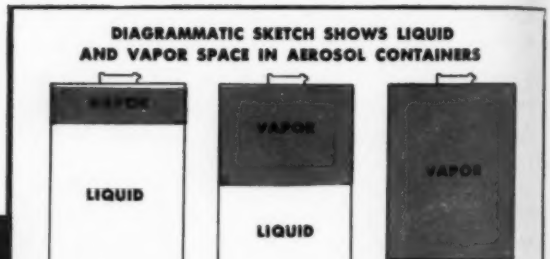

DIAGRAMMATIC SKETCH SHOWS LIQUID AND VAPOR SPACE IN AEROSOL CONTAINERS
VAPOR
LIQUID
VAPOR
LIQUID
VAPOR
LIQUID
Unused aerosol has small vapor space into which liquefied gas propellent has evaporated.
As liquid product is used, vapor space increases and is occupied by evaporated propellent.
Liquid almost entirely dispensed, yet pressure in vapor space remains the same.

Figure 1

Put the Push in Aerosols

pounds) to meet the compatibility, solubility, pressure, and other requirements of the active ingredients to produce the most satisfactory product. These formulations may contain solutions of active ingredients in oil, alcohol or other solvents dissolved in the liquid propellent.

If a liquefied gas propellent alone were present in a container, the pressure would remain exactly the same until all of the liquid had been emptied. The relative amount of liquid and vapor would make no difference in the pressure as long as there is no change in temperature.

The vapor pressure of a solution depends on the relative amounts of the different materials which make up the solution. When only this solution is discharged from the container, the relative concentration of materials in solution remains unchanged. As vapor space in the container increases, some of the liquid evaporates to fill up this vapor space.

A given volume of liquid "Freon" propellent will contain about 70 times as much material by weight as the same volume of vapor. When the vapor volume in the container is increased, such a very small amount of liquid is evaporated to occupy the new vapor space that the composition of the remaining liquid is not appreciably altered.

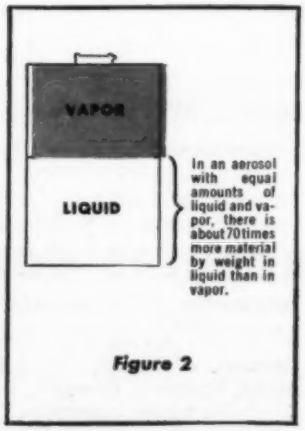

VAPOR
LIQUID
In an aerosol with equal amounts of liquid and vapor, there is about 70 times more material by weight in liquid than in vapor.

Figure 2

Because of this characteristic of "Freon" propellents, an aerosol product is dispensed at the same rate when the container is nearly empty as when it is nearly full. It is also possible to get virtually all of the product out of the container; there is no waste.

In a situation where only compressed gas is used as the propelling force, there is no reservoir of liquid, and the pressure continuously drops during discharge of the container.

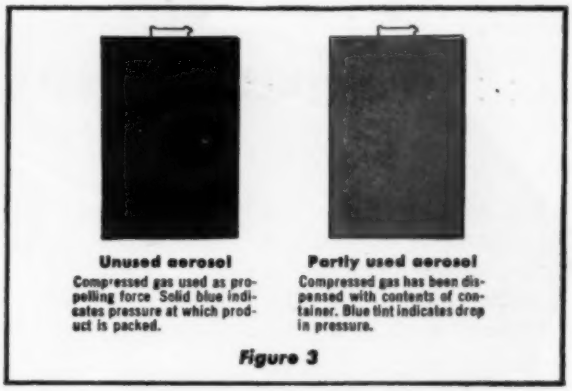

Unused aerosol
Compressed gas used as propelling force. Solid blue indicates pressure at which product is packed.
Partly used aerosol
Compressed gas has been dispensed with contents of container. Blue tint indicates drop in pressure.

Figure 3

• • • • •

Du Pont "Freon" propellents are ideal for all types of aerosol formulations. These propellents are safe . . . nonflammable, nonexplosive, noncorrosive, virtually nontoxic. They are made by scientific, laboratory-controlled methods that insure their stability, uniformity and quality.

Why not investigate the possibility of marketing products of your own in aerosol form—or of developing new products in this modern package? Both Du Pont and contract loaders will work with you in developing your aerosol products, and contract loaders will package aerosols to your specifications in any quantity.

Write us for information on this fast-growing packaging field. Write also for a copy of Du Pont's latest survey of the consumer market for aerosol products. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Del.

KINETIC

FREON

SAFE PROPELLENTS

*"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents

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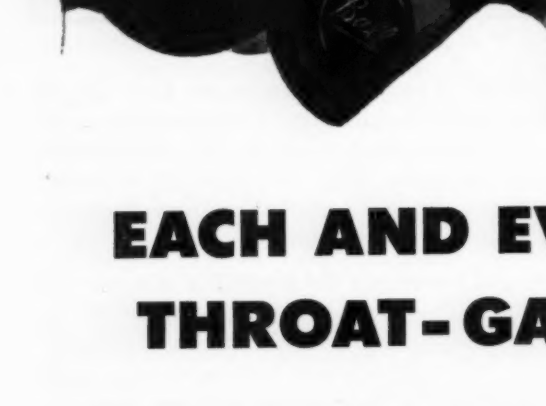

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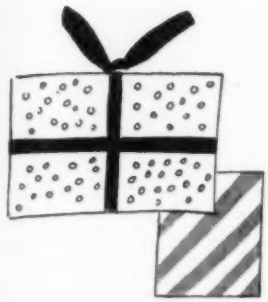


Packaging and Selling

Sales Quotas

The Curtis Publishing Company has just released their booklet "Analyzing Markets and Setting Sales Quotas." While this is a valuable manual for the harassed sales manager who has to struggle with sales quotas, we also find a few phrases and ideas in this booklet that somewhat appeal to us. For instance, we like the phrase, "The birthright of every American manufacturer is not markets but marketing opportunity." We also like the clarification in thinking between distribution and advertising as: "The major problems of profitable marketing can be divided into two broad groups—the sales or distribution problems and the advertising problems. The sales or distribution problems are concerned in large part with a 'Where People Buy.' The major aspects of the advertising problem are concerned with 'Where Consumer Buyers Live.'" Obviously, in this day of the universal automobile and frequent travel, where people live may be a very different place from where they buy.

In discussing this further, the Curtis booklet states that the primary factors determining the boundary of a shopping area are the shopping habits of the public These shopping habits have been found by many studies to be determined by: (1) Selection, variety and availability of merchandise in retail stores. (2) The distance necessary to travel and (3) the highway and transportation facilities available.

These various factors were studied intensively by Dr. W. J. Reilly of the University of Texas. Through interviewing and observation, he developed a theory of retail gravitation which he stated as follows: "Two cities attract retail trade from an intermediate area in the vicinity of the breaking point approximately in direct proportion to the population of the two cities and in inverse proportion to the square of the distance from the two cities to the intermediate area."

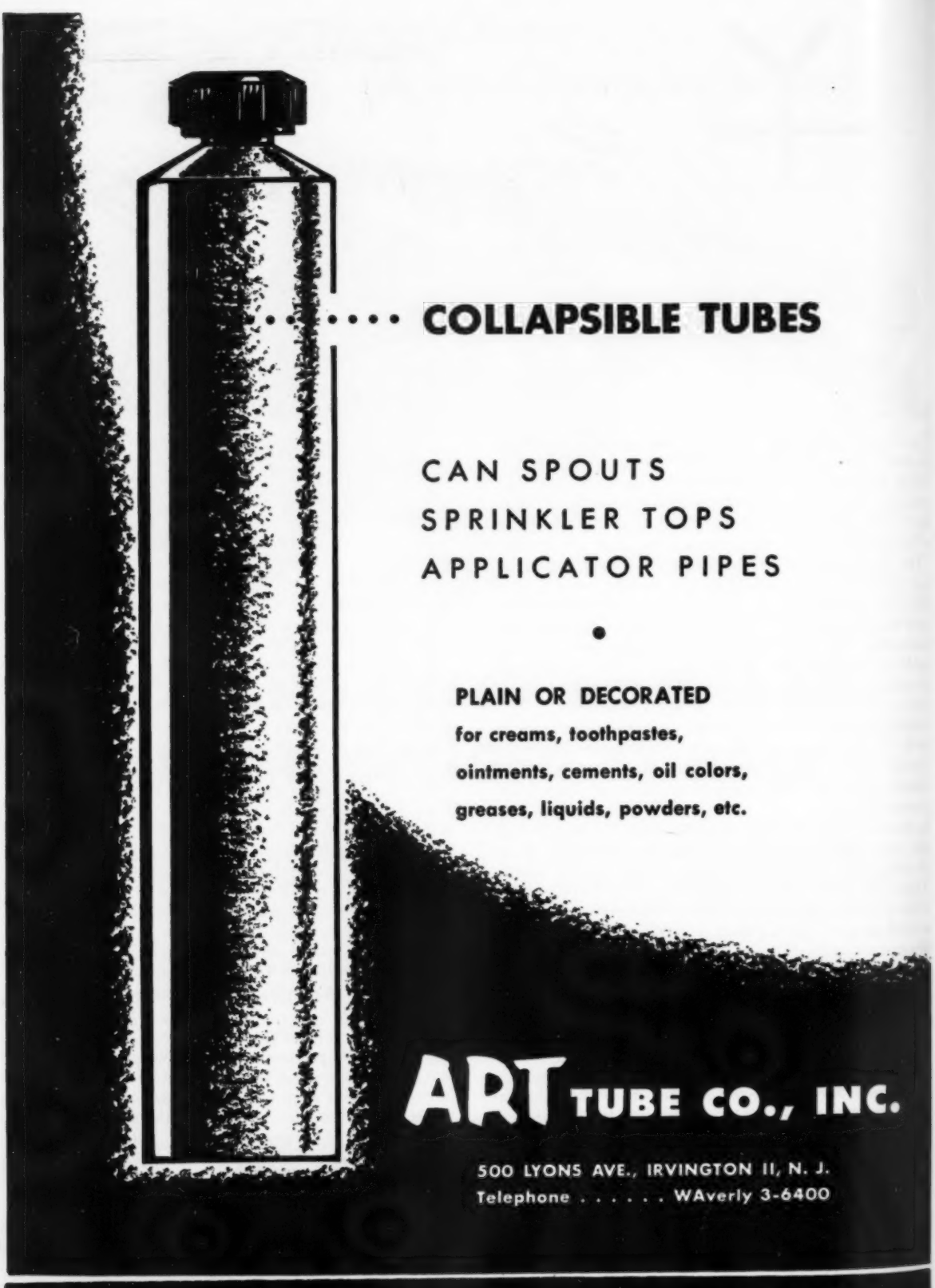
If that is the sort of thing that you like to discuss over cocktails, we recommend that you get this booklet and look at the mathematical formula developed by Professor P. D. Converse of the University of Illinois. We would publish this formula for you if it did not mean going out and buying a lot of extra symbols that we are sure our printer doesn't possess.

In our own humble way, we have done a little research and come to some conclusions about the subject of where people live and where they buy. For instance, a few years ago, we spent a week at a farm near a small village about fifty miles from Columbus, Ohio. This village, three miles from the farm, was primarily a shopping place for convenience products and services. In other words, there were two big farm hardware stores, several gas stations and garages, feed stores, two apparel stores which carried nothing but work shoes and work clothes and low-priced house dresses and one small rather pathetic drugstore which in addition to prescriptions, carried very little except magazines, toilet articles and proprietary staples. No one ever went to this village for anything that meant in the least sense shopping, that is, for glassware except heavy kitchen ware or for house dresses over $5.00 or $6.00 or except heavy utility shoes.

Eight miles away was the very prosperous thriving county seat with a population of about 12,000 people. This was a considerable stepup in shopping facilities. This town had a department store which made little or no pretense at real fashion goods. Saturday afternoon and evening looked like a County Fair in gaiety, crowds and activity. Nevertheless, in talking to the farm and village people around this active thriving county seat, we discovered that whenever they wanted anything that required real shopping in apparel or accessories or furniture or books or glassware or anything of that sort, they waited for their trip to Columbus, which nearly everyone, farm and village people, would make at least twice a month.

The point we are trying to make here is that we are not disputing the professor's mathematics but we are stating that there is a strong and potent human factor in the desire to shop and an inclination to move to a larger place when they are thinking in terms of spending a larger sum of money.

The other thing which we have observed in setting sales quotas, and this is the great grievance of many salesmen, is that there is a curious variation in states and cities in the consumption of practically any kind of product whether it is chewing gum, sachet or anything else. This variation has nothing to do with climate or average income or social status or automobiles or anything else. It is just a non-understandable human factor that people may love to use sachets in Texas but have no use for them in Alabama. For this reason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in setting sales quotas for any product, this geographical variation of the product must be known.
In addition to that, there is hardly a brand in the United States, no matter how famous, that doesn't have a wide sales variation, according to city and according to individual stores. These two factors must be known because they are not particularly within the power of the individual salesman acting alone to vary. It would be only too easy if the salesman could be blamed for this variation by store or city or product. There is something mysterious here that market research has never worked out. Maybe even there is a mathematical formula for it.

New Words—New Times

Every turn in the tide when business swings from one direction to another brings its own new vocabulary. Before the War, we had a lot of new words and phrases like "Profitless Prosperity" and "Pineboard Stores."
During the War and following it, we had a new assortment of words such as "black market," "gray market" and many others.
It may be significant that our vocabulary is now being enriched by a new set of words. One of these words is called "Bushing." This is a selling technique best illustrated in the automobile business. A car owner finds a card tucked on his windshield which says in effect: "Will you take $1,000.00 for this car?" This is a price well above the market value and when the eager seller goes to the automobile agency with the car, the salesman fills out all the forms and then says he has to get approval of the owner. When the owner appears on the scene, he bawls out the salesman for putting him out of business by quoting such an absurdly high price and after a long argument the owner makes concessions and they come to an agreement for $850.00. This is less than the car is worth anywhere else, but the eager seller is so delighted at the way the salesman pushed the owner into a corner to get him a good price that he very often closes the deal.
The other new word is "Roast Beefing" which is just the opposite of the tactics above. In this case when a prospective buyer comes in with an appliance turn-in which may, for instance, be worth $100.00 the salesman quotes a ridiculously low price of, say, $60.00. The owner overhears this conversation and bawls the salesman in public for quoting such a low price and not treating the customers fairly. After a very wordy battle the owner demolishes the salesman and states that the price is $85.00. All this time the customer has forgotten all values in the heat of battle and since he feels that the salesman tried to cheat him, he is delighted at the liberal offer of this owner and forgotten is the fact that the offer is quite a bit below the value he could have gotten in any other place.

Quote

"The trend toward self-service made advertising and merchandising more important than ever before. Shoppers must be "pre-sold" before entering a swift-moving market in which a multiplicity of items competes for their attention. Present-day advertising must create the desire for ice cream, and particularly for the Borden brand; with self-service, present-day merchandising must work to clinch the sale, to do the in-store promotion."
This paragraph appeared in the 1953 annual report of the Borden Company.

Color appeal of mottled urea closures, introduced by Closure and Plastics division of Owens-Illinois Glass Co., at recent Packaging Exposition in Atlantic City. Combinations include green and white, blue and white, red and white, and a variety of colors. These closures, which come in a variety of shapes and sizes, are designed primarily for the cosmetic industry.

No Hair Saturation

Caryl Richards, Inc. have opened a large consumer advertising campaign on its cold waves, hair creams and shampoos. These products are available only in beauty salons. George Barrie, President of the company, stated, "This is the first answer on behalf of beauty salons to over-the-counter sale of home cold wave goods. We believe the trend to home waves has been arrested and that now is the time for the professional industry to gain sales volume and prove the needs of the professional skills of the hairdresser."

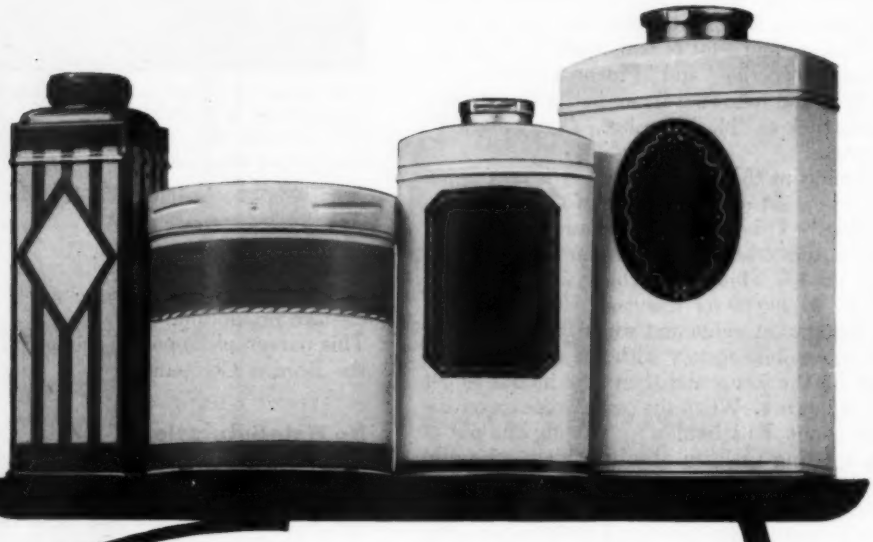
Salesmen Waste Time

Henry Flarsheim, speaking at the Executive Sales Club, stated: "The amount of time which is wasted by retail salespeople between customers, if properly used, could move more merchandise than all the retail stores in America are succeeding in selling."
If these retail salespeople did stop wasting their time, we would have to do something about the manufacturer's salesman and his waste of time so that these fellows would go out and sell more than manufacturers could possibly produce with all their factories and equipment in order to keep the flow of business in normal working condition.
In a very extensive survey by the Bureau of Business Research at Ohio State University, just a few years ago, it was shown that the salesman calling on the retailer used a shockingly small amount of time actually getting down to brass tacks and selling his goods.

Your product will be

SITTING PRETTY

in a Continental container



● On the store counter or in the home, your product will *look* and *act* its very best in a Continental container. Our artists and lithographers take infinite pains to make packages that are *easy to look at* . . . our design people work equally hard to make packages that are *easy to use*. And, always available to our customers are the skilled services of engineers, scientists and package machinery specialists. Why not see what Continental's Tailor-Made Package Service can do for you — personally.

CONTINENTAL CAN COMPANY

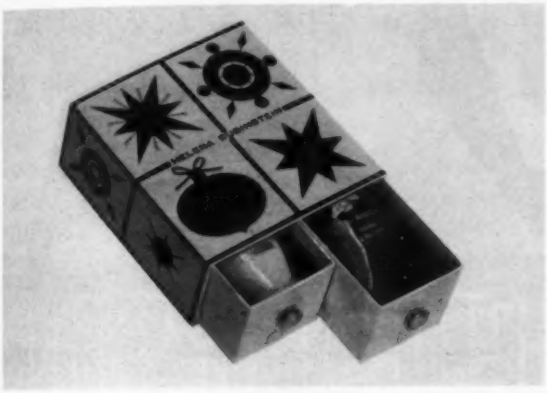
Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

Annual Paper Box Competition

The fourth annual Set-Up Paper Box Competition, sponsored by the National Paper Box Manufacturers' Association has just been completed and the box winning awards to this trade, in their respective categories are as follows:

In the first awards, the Ciba Drug samples box, a Helena Rubinstein gift box and a Colgate-Palmolive

(Continued on page 667)



First Award in Cosmetics.
George H. Snyder, Inc. for Helena Rubinstein.

First Award in Drugs, Chemicals & Pharmaceuticals.
Walter P. Miller Co. for Ciba Pharmaceutical Products.

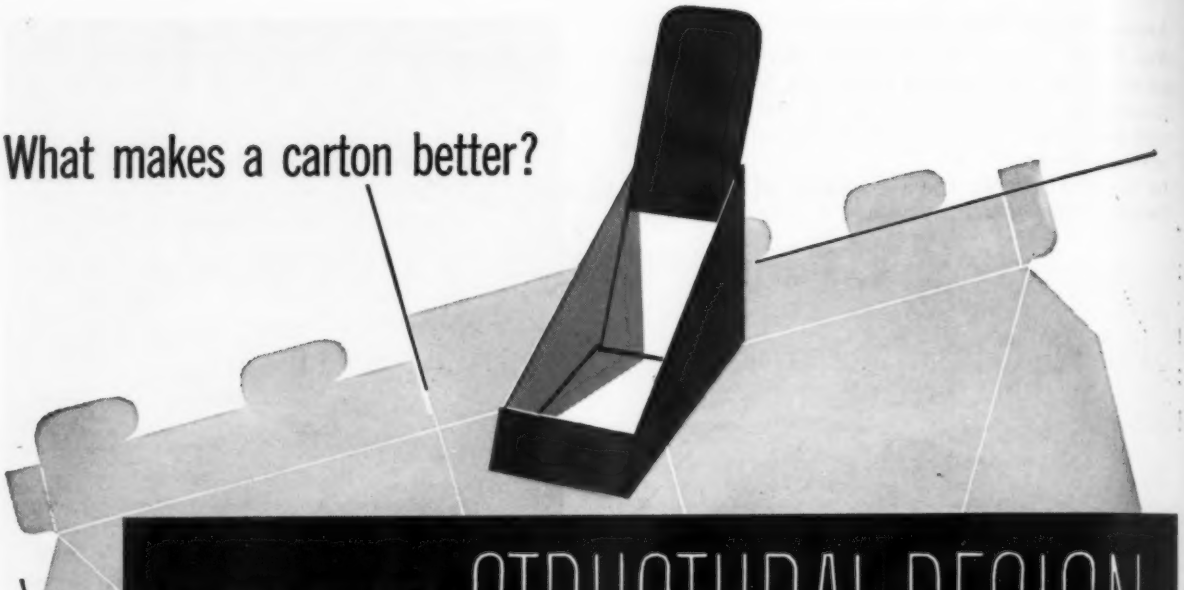
First Award in Superiority of Construction.
W. C. Ritchie & Co. for Lucien Lelong.

Honorable Mention in Cosmetics.
F. N. Burt Co. for Avon Products.

Honorable Mention in Drugs, Chemicals & Pharmaceuticals.
Walter P. Miller Co. for Smith, Kline & French Labs.

Honorable mention in Mailing Boxes.
Walter P. Miller Co. for Burroughs Wellcome & Co.

What makes a carton better?



GAIR STRUCTURAL DESIGN

One of the features of Gair's Coordinated Packaging Service

Hand a product to the Gair engineers and ask for a folding carton that will protect it . . . display it . . . sell it — they'll come up with the answer. The structure they design may range all the way from a simple seal end carton to a rhomboid display like the one illustrated. Whatever it is, it will be the right carton for the job.

For instance, Gair's team of gifted craftsmen worked with the Hat Corporation of America to produce the first folding carton for men's hats—and ended the 150-year reign of the round pre-formed box.

In meeting challenges of structural design, Gair engineers solve problems which extend from the choice of paperboard to how the carton will work on an automatic packaging machine.

Add *structural design* to the other features — graphic design and its faithful reproduction, carton production from a variety of materials, expert help on mechanical packaging — and you have the story on Gair's Coordinated Packaging Service.

This service can solve *your* problem, too; we'll be pleased to tell you how. *For specific information on carton structure, write for a copy of* Cartons by Gair. *Please address request to Dept.*

GAIR

FOLDING CARTONS
SHIPPING CONTAINERS
PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44th STREET • NEW YORK 17

(*Continued from page 665*)

Jasmin Soap Gift Box received first awards for general superiority, according to end-use.

Ciba also received an award for a pharmaceutical mailer box.

Helena Rubinstein received a second award for best surface design and execution and Lucien Lelong, an award for superiority of construction.

Among the second awards were Barbara Gould sample box and Smith, Kline & French Drug Sample Box, Hewitt Soap Box, the Avon Products Spring creation cosmetics box, the Geigy Pharmaceutical Mailer and the Burroughs Wellcome mailer.

Still at It!

It is reported that Lever is testing a new antibiotic tooth paste next month. Consumers will then be told about Shield, which contains an antibiotic called tyrothricin, discovered at the Rockefeller Institute, rarely used and in the public domain. We had almost forgotten about Jergens Penicillin Tooth Paste which was first distributed ethically several years ago.

Apparently, while "miracles" in chemistry and drugs keeping popping up all over the lot, there will be little rest for the weary for those in the dentifrice business. Maybe it is a good thing that the recent newcomers in the tooth paste business are coming from the soap field, such as P & G and Lever because it is not impossible for the television public to get so mixed up with Shields, Guards, U-23, V-64 and Skiddo 13 that in an agony of indecision, they will go back to plain soap.

New Association

The National Association of Private Brand Manufacturers, Inc. has been formed and will have offices at 39 Broadway. This is the office of Arthur E. Herrick, Food & Drug lawyer.

First Cosmetic Company

Toni has for the last several years been an outstanding leader in the cosmetic industry in expenditures for research. Now we hear that last year 65 per cent of its sales volume was on products introduced within the last two years.

Several times before, in this department, we have deplored the fact that no cosmetic manufacturer could equal the research achievement of many pharmaceutical manufacturers who, in commenting in annual reports and in speeches, have stated at least 50 per cent of their annual current sales volume is in products that were not in existence ten years ago. Maybe the cosmetic folks are beginning to catch up in their own record research achievement.

U. S. in Small Town Market

While the primary marketing centers have been growing in influence and the amount of business they control increasing, this is still basically a small-town market from the viewpoint of where people live. For instance, in the 1950 census of population, 65 per cent of all of the inhabitants of the United States live in places of less than 50,000 population. This is a market of 97,454,921 potential buyers.

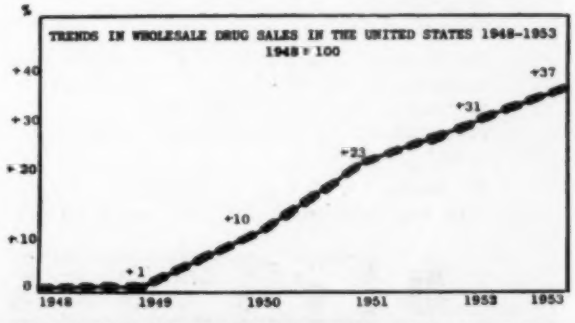
Good Sales Manual

Food Store Marketing (1953) is a booklet which contains the address by Arthur C. Nielsen to Grocery Manufacturers of America, Inc. This is a booklet so packed with invaluable marketing information for anyone selling a packaged product to retail stores that it should be procured from the Nielsen organization and studied diligently.

Here is some of the information. Some drugstore products are now selling in more grocery stores than in drugstores. Some of these products have had a tremendous increase in grocery store distribution. Without evaluating the number of store stocking, one should keep in mind that there are about 55,000 drugstores in operation today. Thus a commodity with only 26 per cent distribution in food stores is stocked by almost twice as many food stores as there are drug outlets. The way this distribution in food stores for certain products shapes up can be seen in the table below given in this booklet.

Product	No. of Food Stores Stocking
Headache remedies	346,000
Dentifrices	342,000
Laxatives	315,000
Shampoos	315,000
Cold remedies	299,000
Shaving Creams	287,000
Hair Tonics	264,000
Oral antiseptics	256,000
Tooth brushes	252,000
Hand Lotions	249,000
Baby oils	233,000
Deodorants	229,000
After-shaving lotion	198,000
Corn remedies	101,000

The balance of this booklet which we consider one of the most valuable sales manuals ever printed within the range of its compact size, covers such subjects as importance of Displays and Shelf Stocks, Packaging Problems, Progress of Major Advertised Brands, Pricing Problem Deals and Combination Offers.



Published by the National Wholesale Druggists' Association, 330 West 42nd Street, New York 36, N. Y.

Our number 431 line of flint glass machine made bottles contains a full range of sizes from 1 dram to 16 ounces. They can be supplied clear or frosted and either undecorated or with your own fired-on ceramic label.
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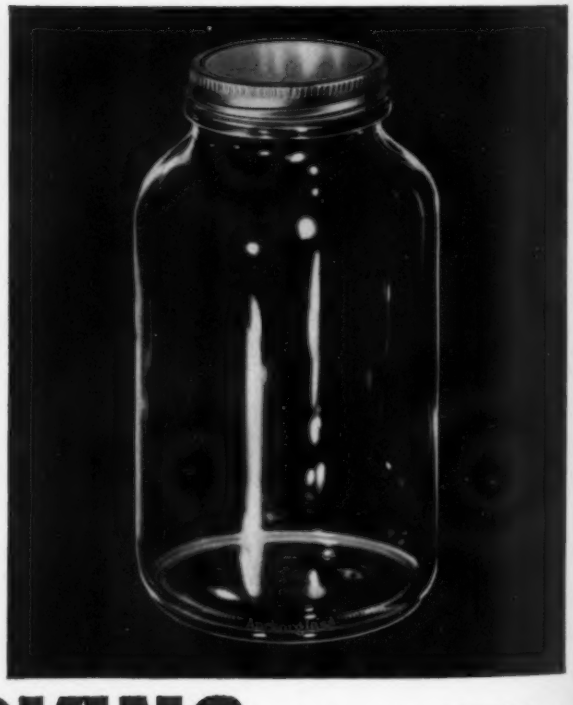
MANY Styles AND Sizes

...BUT ALL ANCHORGLASS CONTAINERS HAVE THE SAME QUALITIES

THEY are uniformly strong, tough, dependable lightweight glass containers—high in chemical durability, accurate in dimensions, capacity and finish. They are designed to withstand the knocks of modern high speed production lines, handling and transportation.

Anchorglass containers are the result of practical engineered designs, careful selection and control of raw materials, uniform distribution of glass, precise temperature control in annealing and thorough quality control through laboratory tests and regular inspections.

If you package or contemplate packaging in glass let us send you sample containers with suitable closures for your particular needs. The services of our Package Engineering and Research Laboratories are also available to help you solve glass packaging problems.



Anchorglass® Wide Mouth Rounds are available in 25 sizes, with capacities from 10 cc. to 4000 cc., in amber glass. They are ideal, economical containers for dry drugs or chemicals, semi-solids or heavy liquids.

ANCHOR HOCKING

GLASS CORPORATION
LANCASTER, OHIO

★

The Most Famous Name in Glass

Doin's

Eaton Laboratories has prepared a new dosage form of Furadantin called Furadantin Pediatric Suspension, for the treatment of young children with urinary tract infections.

Tom Fields, Ltd. has added Tinkerbell fragrant dusting powder, Style No. 201 to its line of Tinkerbell Toiletries. The octagonal powder box contains six ounces of flower-fresh, fluffy talc and a smooth, snow-white velour puff tabbed with a dainty satin ribbon for easy handling.

Sharp & Dohme has released Topatar Cream, a new cosmetically-pleasing coal tar preparation for the treatment of a wide range of dermatoses. It is recommended for the treatment of many skin disorders that respond satisfactorily to the topical application of tar.

Nepera Chemical Co. has prepared Choledyl, a new xanthine preparation, which is indicated for planned diuresis, prolonged coronary vasodilation, continued relief of bronchospasm, relief and prevention of premenstrual tension.

Hynson, Westcott & Dunning, Inc. has announced the preparation of Lutrexin (brand name for the protein-like uterine relaxing factor) which may be useful in threatened and habitual abortions.

Eli Lilly & Co. is offering a liquid form of its best-known, long-acting antihistaminic, called Suspension Co-Pyronil (Pyrrobutamine Compound, Lilly). It is indicated for relief of allergic symptoms, especially nasal and ocular symptoms associated with hay fever and vasomotor rhinitis. The oral suspension extends the therapeutic usefulness of the Co-Pyronil formula.

Perry Bros., Inc., 220 Flushing Ave., Brooklyn, is offering a new stable opacifier, called Emulsifier X-180, which is designed for use in cold wave and other cosmetic lotions. It is composed on non-ionic material, contains no resins, is non-toxic and non-irritating.

Ex-Lax, Inc. has introduced a new, large economy size package of Ex-Lax which contains 48 tablets. It retails at 65 cents.

Merck & Co. has developed the use of narcotine as a cough suppressant. This is the first non-addicting opium derivative found to have specific anti-cough properties.

Smith, Kline & French Laboratories has introduced Teldrin Spansule, a new antihistamine capsule providing 12 hours of protection against allergies such as hay fever. The preparation provides continuous relief from allergic symptoms over a prolonged period of time with only one oral dose.

Lakeside Laboratories has developed Dactil, a new preparation that has clinically been found to relieve pain and spasm within minutes, while relaxing the viscus and permitting it to act normally. It is being introduced this month to pharmacists through wholesalers.

Nepera Chemical Co. has released Biomydrin Otic, a highly effective preparation against both otitis media and otitis externa.

Aceto Chemical Co. is offering a complete line of fatty alcohols of exceptionally high purity to meet the exacting requirements of the cosmetic and pharmaceutical industries. Technical bulletins are available from the company at 40-40 Lawrence St., Flushing 54, N. Y.

Helena Rubinstein has developed Hair Stick, a coloring agent which comes in an attractive, purse-sized, metal push-up container that looks like an over-large lipstick. Hair Stick covers new growth between tints or bleaches, is just right for the woman beginning to gray but not yet ready to tint her hair.

Sharples Chemicals Inc. has prepared Nonic 300, a wetting agent, detergent and emulsifying agent which is effective over a wide range of water hardness, pH and temperature.

Toni will introduce next month a clear liquid shampoo, called Pamper. It is pleasantly fragrant, amber in color, produces rich, abundant lather, and is recommended for all types of hair—dry, oily or normal.

Juliette Marglen, Hollywood, Calif., has introduced Namlon, a basecoat and sealer. The two products, sold as separate units have been added to the company's line.

Dodge & Olcott's Certified Colors are now being supplied in a specially designed, lithographed can. Both certified primary and secondary colors are available under the new D&O label, as well as Special Technical Colors, at the manufacturer's request.

Massengill is distributing Gallogen Tablets, an effective therapeutic agent for the treatment of diseases of the liver and the biliary system. It is prompt acting with no unpleasant side effect. Gallogen is indicated whenever it is desirable to increase the flow of bile, encourage activity of the gall bladder, and promote normal function of the biliary system.

Tablet coating

BY RONALD CLARKSON—TABLET CONSULTANT

At Last—A practical, authoritative textbook on Tablet Coating!

This is the answer to a world-wide request for a down-to-earth book on this highly specialized technique.

The author, Ronald Clarkson, an outstanding tablet consultant, is well known in this country and abroad for his contribution to technical literature on Tablet Manufacturing. Co-author of the text book *Manufacture of Compressed Tablets,* he has also presented papers on various phases of tablet manufacturing before the APMA production meetings.

Since entering the consulting field he has been a contributor to *Drug and Cosmetic Industry*.

In his capacity as a consultant the author has been supplying coating instructions to his clients in various parts of the world at a substantial fee. This confidential copyrighted treatise was entitled *The Fundamental Procedure for Coating Tablets* and forms the basis for this text.

The original treatise has been greatly expanded and here it is at a fraction of the original price!

A Valuable Aid to Everyone interested in coating tablets

- Production Managers
- Sales Managers
- Coaters (experienced and inexperienced)
- Development and Research Men
- Beginners
- Students

A Technical Book filled with Formulas for

- Subcoating Syrups
- Dusting Powders
- Colored Syrups
- Polishing Solutions
- Protective Coatings
- Coatings for Tropical Climates
- Enteric Coatings

In addition to the valuable formulas, complete directions for their preparation are given—even to such minute details as the temperatures at which they should be used.

Detailed instructions on how to reclaim spoiled tablets are outlined.

An entire chapter is devoted to installing a coating department—recommendations being given regarding the proper size and type of equipment, operating capacities, dust control and hot air systems—also how to lay out a complete coating department, including blueprint floor plan.

All extraneous matter has been omitted. This book deals 100% with the details of actual coating—how to do it and produce satisfactory results.

Here is the first book of its kind ever published. Complete, simple, and easy to follow instructions on what to *do* and what *not* to do. It will prove invaluable to you as an instructive text, and as a ready reference.

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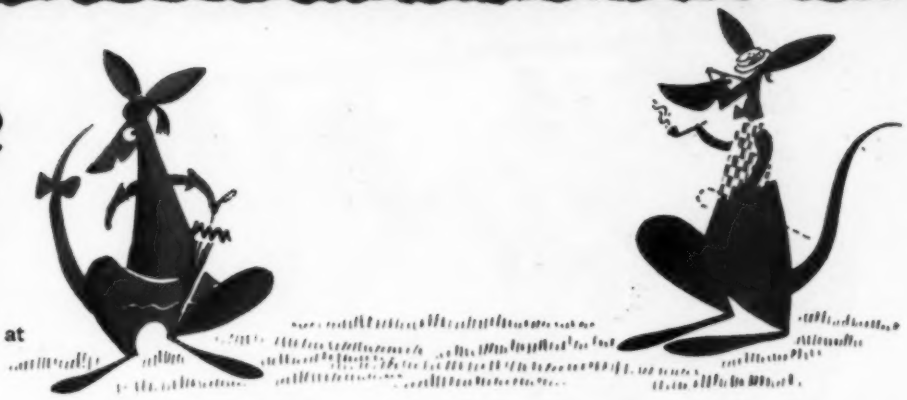

use appeal

Ease of squeeze dispensing to increase consumption at point-of-use.

repeat appeal

Use convenience and shelf-impact combine to foster brand loyalty.

The Plaxpak bottle "fights" for your product at the point-of-sale, re-sells it at the point-of-use and so brings customers back for more. Plax has unequalled experience in plastic bottle packaging—let us help you produce another merchandising success.

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Also 6-oz. Size*

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SPRA-TAINER was born to leadership. Historically, it was the world's first lightweight pressurized container. Now it's "First Choice" with manufacturers in one industry after another. "No Top Seam, No Side Seam" construction provides surest product protection. Exclusive "Modern Design" commands the most attention, hence sells the most merchandise. SPRA-TAINER is but one member of Crown's distinguished family of finest quality cans. Our complete line offers progressive packaging to the many and diverse products of American industry. May we tell you about it in person? Just call or write.

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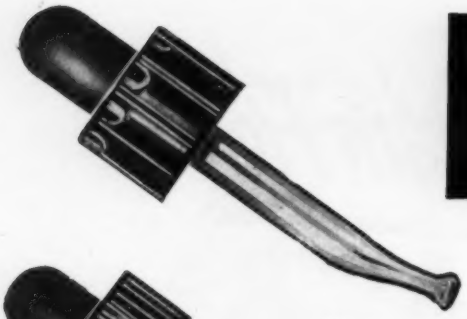

#1
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; Saftee ball glass.

#3
Regular plastic cap; thin flange rubber bulb; semi- blunt glass.

#4
Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass.

#5
Small size plastic cap; midget rubber bulb; regular straight glass.

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"Repeat-Sale Insurance" for Liquid Preparations

The New Perfection line of functionally designed dropping parts gives satisfaction where satisfaction counts—in the hands of the user. To make sure the customer's first reaction to your product is 100% favorable, specify New Perfection. Our rigid inspection system assures the cleanliness and uniform high quality of every shipment.

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This inexpensive extra adds welcome convenience to the use of your product. Accurate calibration in any color marks the specific dosage indicated. Your firm name or trade-mark may also be imprinted.

#2
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED IN COLOR)

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IN ADDITION to NATURAL RUBBER BULBS for GENERAL USES, WE CAN ALSO SUPPLY

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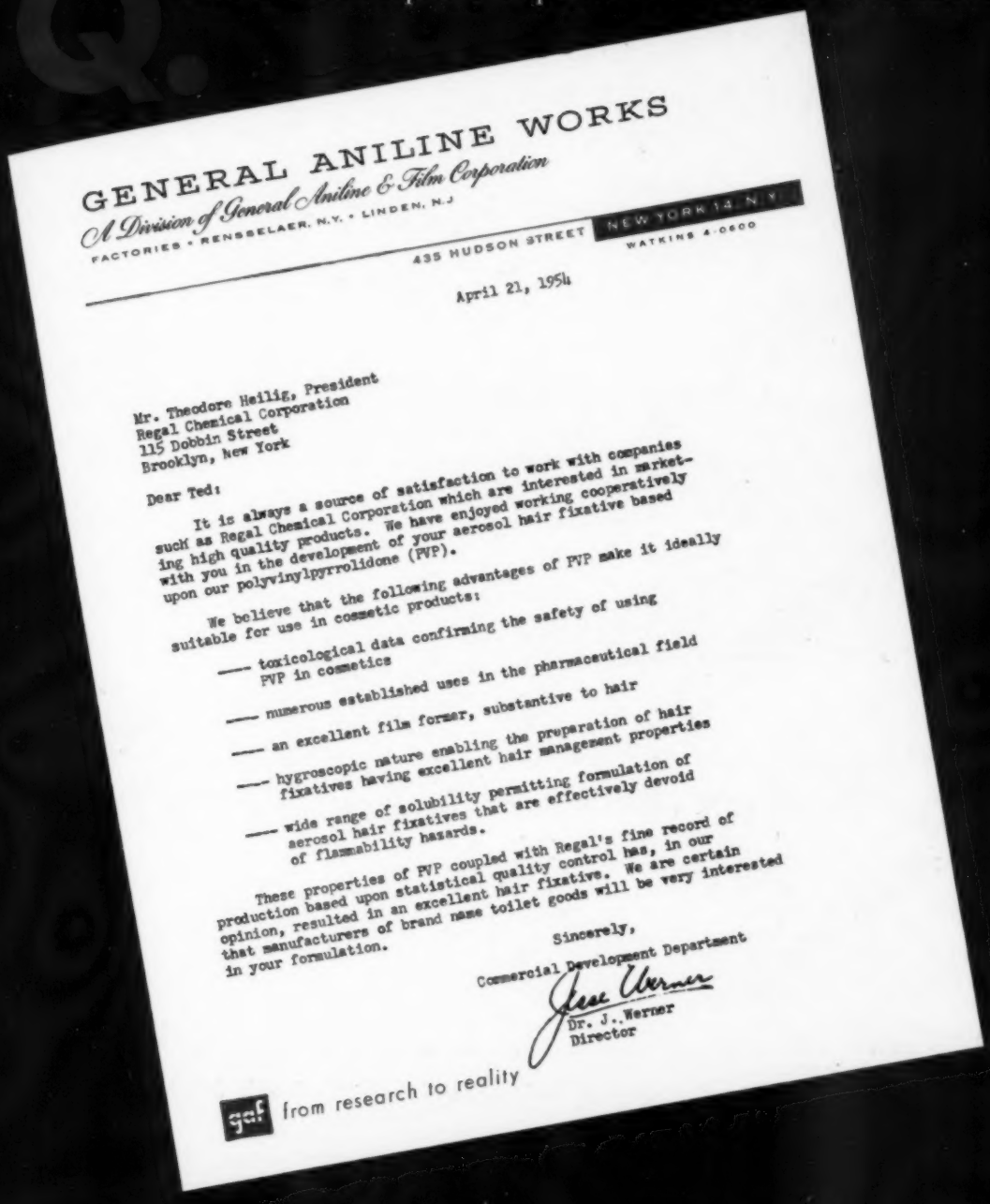
Q. Who has developed a Superior Hair Fixative formulation?



GENERAL ANILINE WORKS
A Division of General Aniline & Film Corporation
FACTORIES • RENSSELAER, N.Y. • LINDEN, N.J.
435 HUDSON STREET NEW YORK 14, N.Y. WATKINS 4-0600

April 21, 1954

Mr. Theodore Heilig, President
Regal Chemical Corporation
115 Dobbin Street
Brooklyn, New York

Dear Ted:

It is always a source of satisfaction to work with companies such as Regal Chemical Corporation which are interested in marketing high quality products. We have enjoyed working cooperatively with you in the development of your aerosol hair fixative based upon our polyvinylpyrrolidone (PVP).

We believe that the following advantages of PVP make it ideally suitable for use in cosmetic products:

—— toxicological data confirming the safety of using PVP in cosmetics

—— numerous established uses in the pharmaceutical field

—— an excellent film former, substantive to hair

—— hygroscopic nature enabling the preparation of hair fixatives having excellent hair management properties

—— wide range of solubility permitting formulation of aerosol hair fixatives that are effectively devoid of flammability hazards.

These properties of PVP coupled with Regal's fine record of production based upon statistical quality control has, in our opinion, resulted in an excellent hair fixative. We are certain that manufacturers of brand name toilet goods will be very interested in your formulation.

Sincerely,

Commercial Development Department

Jesse Werner

Dr. J. Werner
Director

gaf from research to reality

A. REGAL CHEMICAL CORPORATION

115 Dobbin Street, Brooklyn 22, New York

Pioneers in Aerosols since 1943

Specializing in toilet goods, cosmetics and pharmaceuticals

FOR PRODUCTS DISPENSED AS

Liquid, Spray and Foam .....

Here Are Your Midwest Filling Plants and Distribution Centers

With two plants, centrally located at Danville, Illinois and Hobart, Indiana, Continental Filling Corporation offers manufacturers of drugs, chemicals, cosmetics, soaps, etc., a service which is hard to equal. We do not merchandise any packaged item. Our sole operation is *contract and custom filling* of containers with *your* products . . . liquid, pressurized or aerosol. Extensive modern facilities assure rapid service. Ample bulk storage space enables us to keep a good supply of your products available at all times. Even larger storage areas for packaged goods make it possible for you to use both our plants as central distributing points . . . and shipping departments are equipped to handle orders of any size. Long experience in all three types of filling for many of the largest manufacturers (as well as the smallest) gives you full assurance of satisfactory, economical service at all times. Write, wire or 'phone for complete details. There's no obligation . . . and we'll be glad to serve you.

WAREHOUSING FACILITIES

DROP SHIPPING IN BULK LOTS

* *NEW pressure dispenser for perfumes and colognes! Replaces atomizers.*

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LIQUID SPRAY FOAM

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CONTINENTAL FILLING CORPORATION

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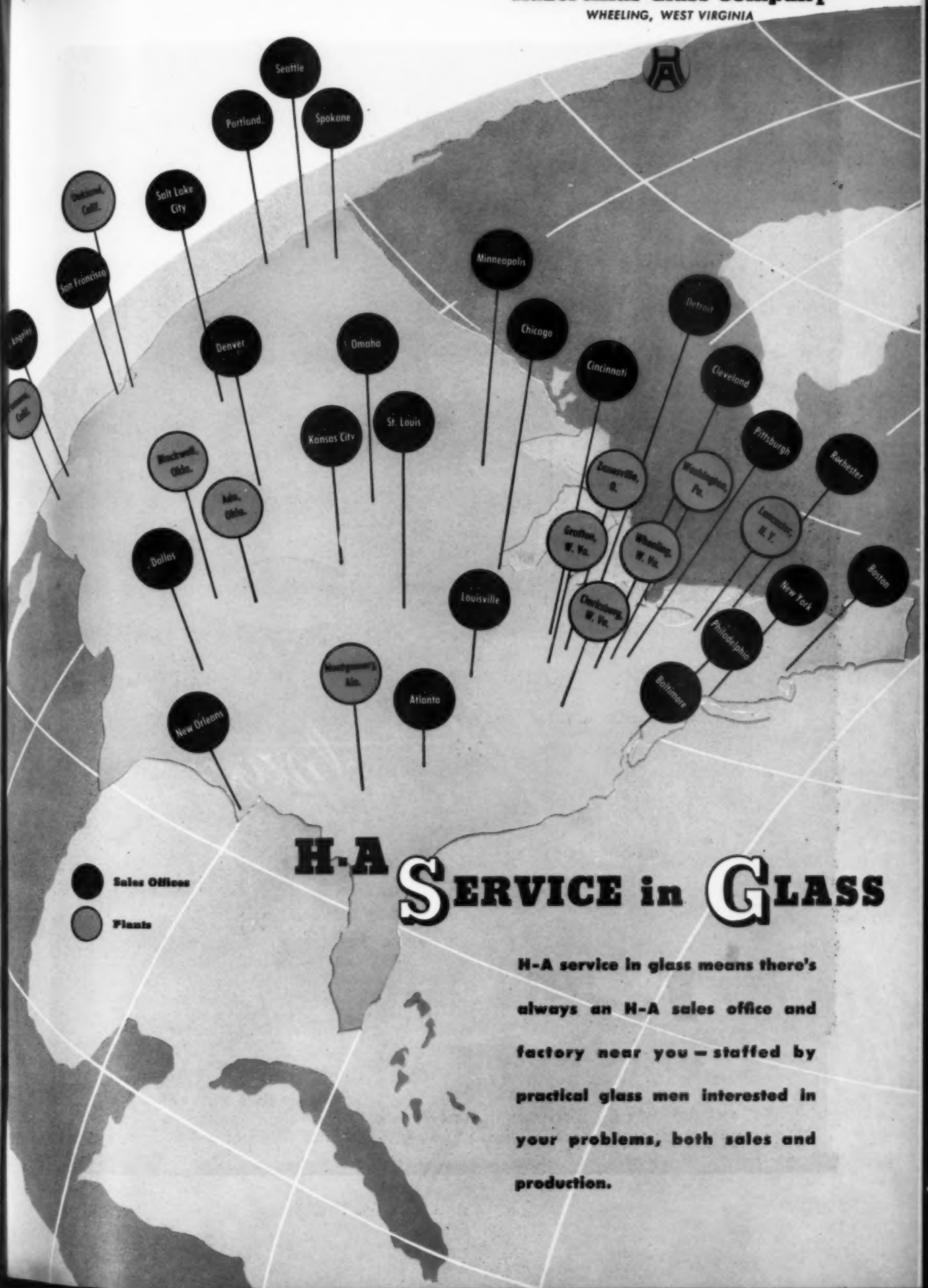
Hazel-Atlas Glass Company

WHEELING, WEST VIRGINIA



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H-A service in glass means there's always an H-A sales office and factory near you — staffed by practical glass men interested in your problems, both sales and production.

NO MOULDING REQUIRED . . . PRODUCT CAN BE POURED DIRECTLY INTO CONTAINER . . . ELIMINATES NECESSITY FOR COSTLY FOIL WRAPPING AND MESSY HANDLING.

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FOR COMPRESSED POWDER

with PUSH BUTTON CLOSURE and METAL HINGE

NO BROKEN FINGER NAILS
NO BROKEN CASES
POSITIVE, EASY
OPENING AND CLOSING

MADE IN STANDARD SIZE AND ALL COLORS.

WIRE, WRITE, OR TELEPHONE FOR SAMPLES AND QUOTATIONS.

CALUMET *Manufacturing Co., Inc.*

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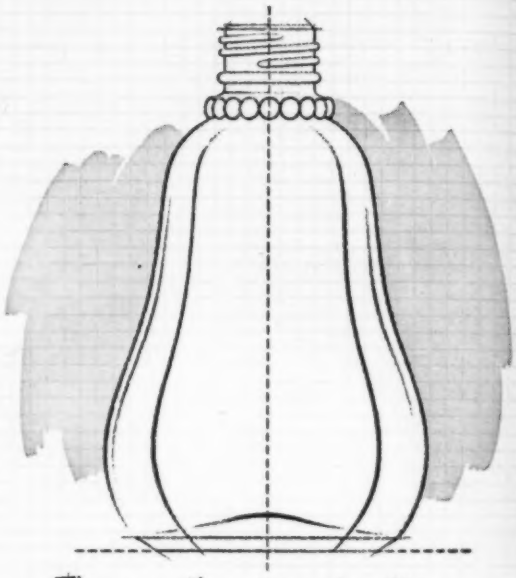
PLANTS: NEW YORK CITY, BLOOMFIELD, N. J.

IN CANADA: CALUMET DIVISION OF THE H. HARDMAN LTD., 117 WELLINGTON ST. WEST, TORONTO, CANADA

What makes a package a SALESpackage?

The precision touch
of the package engineer



The creative imagination
of the designer

The retail know-how
of the merchandiser

Any one of these may hold the answer to your problem

The right answer is usually a *combination* of these various factors.

The Owens-Illinois method of systematic exposure of packaging problems to the engineer, the designer and the marketer assures you the maximum in consistent delivery of top packaging values.

DURAGLAS CONTAINERS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

News . . .

Promoted by Bristol-Myers

Dr. Wilhelm Reiss has been appointed director of research for Bristol-Myers Products division, according to J. J. Clarey, Jr., vice-president. He had formerly been scientist-in-charge of analytical and physical chemistry.

DR. WILHELM REISS

Stewart Elected Exec. V.P.

Newell G. Stewart, nationally known in the retail drug field, was elected executive vice-president of the National Pharmaceutical Council on April 1, according to Dr. Theodore G. Klumpp, president. He will assume the position of administrative head of the Council in June, with headquarters in New York City. He is also president elect of the American Pharmaceutical Association, and secretary of the Arizona Pharmaceutical Association, and of the Arizona Board of Pharmacy.

Dr. John W. Dargavel, executive secretary of the National Association of Retail Druggists, has accepted the chairmanship of the NPC's advisory committee.

Haines Name Tech. Director

Dr. William J. Haines has been appointed technical director of the Armour Laboratories, according to Edgar L. Patch, general manager, and will take over his duties on June 15. He will supervise medical work, research, process development and quality control.

Schneider on Alcolac Board

Richard B. Schneider, vice-president in charge of the chemical department, Empire Trust Co., has been elected to the board of directors of American Alcolac Corp., according to Vova Blinoff, president.

Jackson, CSC Vice-President

W. Ward Jackson has been named a vice-president of Commercial Solvents Corp., according to J. Albert Woods, president. He will direct the company's petrochemicals division.

He had previously been general manager of the industrial chemicals sales department, a unit of that division.

Mr. Jackson succeeds Abbott K. Hamilton who resigned to resume operation of the business consultant firm bearing his name.

W. WARD JACKSON

Pharm. Education Elections

Dr. Robert L. Swain, editor, Topics Publishing Company, was elected president of the American Foundation for Pharmaceutical Education at the 12th annual meeting of the Foundation on April 12 at the Biltmore Hotel, New York. Other officers, all re-elected, are Howard B. Fonda, senior vice-president, Burroughs Wellcome & Co. (U.S.A.) Inc., treasurer; James F. Hoge, Rogers, Hoge & Hills, counsel; and W. Paul Briggs, former Dean, the George Washington University, secretary.

The following were elected as directors of the Foundation: Elmer H. Bobst, chairman of the board, Warner-Hudnut Inc.; George B. Burrus, president, Peoples Drug Stores, Inc.; John L. Davenport, executive vice-president, Chas. Pfizer & Co.; Smith Richardson, Jr., vice-president, Vick Chemical Co.; Linwood F. Tice, assistant dean, Philadelphia College of Pharmacy and Science; John J. Toohy, executive vice-president, E. R. Squibb & Sons, division of Mathieson Chemical Corp.; and Edward T. T. Williams, president, the Lambert Company.

George J. Smith, president, Johnson & Johnson, was re-elected a director.

George V. Doerr, vice-president of McKesson & Robbins, Inc., is honorary president of the Foundation.

Roerig Expands Med. Dept.

J. B. Roerig & Co. has established a greatly expanded medical department, according to Herbert P. Nack, administrative vice-president. Dr. Robert A. Peterman, Roerig's medical director, has appointed three new assistants to aid in the supervision of basic and clinical research: Dr. Thomas A. Garrett, associate medical director; Dr. Marvin Ziporyn, director of clinical research; and Dr. Joseph R. Rich, director of medical service.

THOMAS J. EATON

Eaton, Ass't V.P., Norwich

Thomas J. Eaton has been elected assistant vice-president of the Norwich Pharmacal Co. With the company since 1948, he had been assistant production manager since 1952. He is the son and nephew, respectively, of the current president and board chairman, and grandson of one of the early supporters and officers of the company.

Buys Transparent Wrap

The Package Machinery Co. has purchased the Transparent Wrap Machine Corp., according to Roe S. Clark, president. The newly acquired company, a manufacturer of machinery for making and filling cellophane-type bags and packages, maintains sales and service facilities in all principal cities of this country, and in several foreign countries. This move will open an entirely new field of business for Package Machinery.

Transwrap machines automatically weigh, fill and seal either liquids or solids into transparent bags or packages, which are simultaneously made by the machine from roll stock.

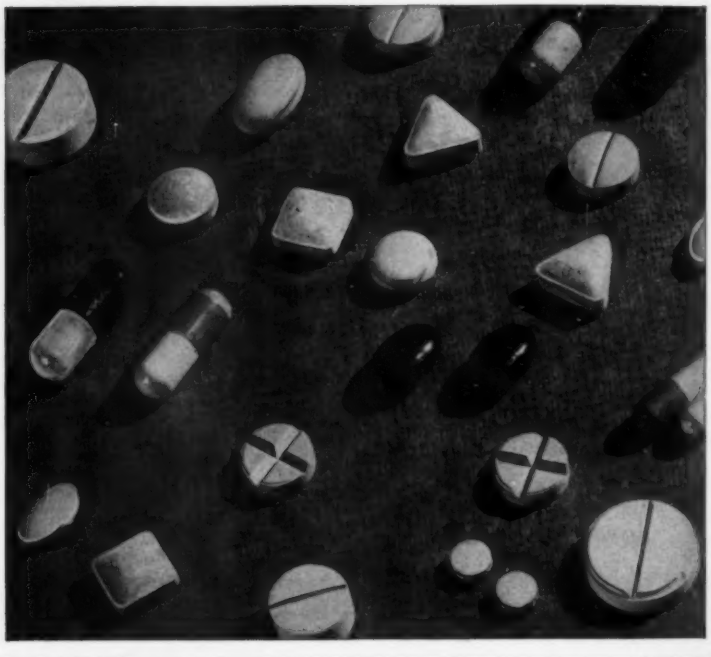
Among the executive and technical personnel of the Transparent Wrap Machine Corp. who will join Package Machinery are Walter Zwoyer, president; Albert Gausman, plant superintendent; Henry Knochel, sales manager; and William Thompson, chief engineer.

AT YOUR IMMEDIATE SERVICE!

Featuring

RAUWOLFIA SERPENTINA

50 mg. and 100 mg.
whole root



One of the Largest Stocks of Pharmaceutical Tablets and Capsules

• • At RICHLYN Laboratories, we stock over 300 standard items, including compressed or coated tablets and hard-shelled or soft capsules. This extensive stock enables us to meet your requirements without delay.

• • As a "private formulation supplier," RICHLYN has achieved outstanding success. With a separate and complete manufacturing unit for this purpose, Richlyn can give exacting attention to the production of private formulae.

• • By dealing only with ethical wholesalers and distributors, we eliminate all competition with our customers — one reason why our business is expanding so rapidly.

• • Whether your order be large or small — a few thousand or several million units—RICHLYN is always happy to serve you. We give personal attention to all of our customers regardless of what volume they require.

• • Richlyn *can* and *does* meet the needs of the nation's leading drug wholesalers and distributing firms.

• • Richlyn *can* and *will* meet *your* most exacting specifications. Send today for our complete catalog.

RICHLYN LABORATORIES

"The Fastest Growing Pharmaceutical Supplier in the Country"

46 NORTH 5TH STREET, PHILADELPHIA 6, PA.

Eddy Retires from Squibb

Clyde, Eddy, merchandising manager of E. R. Squibb & Sons, is retiring after 26 years with the company. He created many window and counter displays which have been enthusiastically accepted by the retail drug trade throughout the United States. His promotional activities, in addition to point-of-sale campaigns, have included the production of retail sales training courses, booklets, slide films and motion pictures.

Mr. Eddy, an adventurer and explorer as well, has made two trips through the Grand Canyon and a small-boat trip from the source of the River Thames to London. He wrote a book about each trip and took motion and still pictures on each adventure which have been used in newsreels, motion picture shorts, and in his own lectures.

Clyde Eddy, left, receiving good wishes of Squibb executive vice-president, J. J. Toohy, during a farewell luncheon given on his behalf. Mr. Eddy is retiring from Squibb after 26 years.

ALBERT V. PROESCHOLDT

Named Merchandising Mgr.

Albert V. Proescholdt has been appointed merchandising manager for E. R. Squibb & Sons, according to W. R. McHargue, advertising and marketing vice-president. He succeeds Clyde Eddy who recently retired.

With Squibb since 1931, Mr. Proescholdt had formerly been associate manager of the department.

Chaleyer Returns from Trip

Phil Chaleyer returned to the United States during the first week in April from a European trip, seven weeks of which he spent in France. He renewed contact with Louis I. Bornand, from whom he brought back several new odors to be presented to the trade.

Moves N. Y. Offices

Publicker Alcohol & Chemical Sales Corp. has moved its New York offices from 424 Madison Ave. to 350 Fifth Avenue. The telephone number is OXford 5-4160.

Waide Appointed by Breck

Walter E. Waide, Jr., has been appointed chief manufacturing chemist at the main plant of John H. Breck Inc.

WALTER E. WAIDE, JR.

Penfold Honored by Fritzsche

A. R. Penfold, director of the Museum of Applied Arts and Sciences of Sydney, Australia, and winner of this year's annual gold medal-$1000 Fritzsche Award, was the guest of honor on April 1, at a dinner and cocktail party given by F. H. Leonhardt, chairman of the board of Fritzsche Brothers, donor of the award.

Others present at the dinner were John H. Montgomery, president of Fritzsche Brothers; Hans P. Wesemann, Dr. Ernest Guenther, John L. Cassullo, Fred Leonhardt, Jr., D. A. Neary, G. A. Wohlfort, Ellis Merkl, Arthur Hemminger, Dr. E. H. Hamann, E. E. Langenau, Fred Richter, R. W. Montgomery and R. W. Wilmer.

Alrose Merges with Geigy

Alrose Chemical Co. has merged with its parent organization, Geigy Chemical Corp., and is now operating as a division of that firm.

Retire from Lilly

Thomas B. Smith, manager of Eli Lilly & Co.'s San Francisco "west" district, retired April 1 because of impaired health. He has managed Lilly affairs in the Bay area and in the Hawaiian Islands, which are a part of the district, for the last 17 years. He has been succeeded in San Francisco by Alfred H. Hardt, formerly manager of the Chicago north district.

Frank J. Warner, manager of the company's Minneapolis district, also retired the first of last month. He first joined the firm in 1915 as a representative covering the entire state of North Dakota, later resigning to open his own drug store. He rejoined Lilly in 1924 as a representative in north-central Minnesota and became manager of the Minneapolis district in 1931.

Retires from Sterling Drug

Alexander M. Stewart, manager of chain store sales for Sterling Drug Inc., retired on April 1 from active business life after 38 years in the drug business. The last 12 years were with Sterling. He was merchandise manager of Associated Chain Drug Stores in 1935, and from 1938 to 1941, manager of chain store sales for Lehn & Fink. Mr. Stewart began working with Sterling Drug in 1942 where he served uninterruptedly until his retirement.

W. F. Zimmerman Sold

The business of W. F. Zimmerman, Inc. has been discontinued, and is now known as W. F. Zimmerman, division of Old Empire Mfg. Chemists, Inc., 865 Mt. Prospect Ave., Newark, N. J. The office will continue at 404 Fourth Ave., New York. Telephones are LExington 2-9383-4.

In the preparation of your Soap fragrances

TRY OUR

SAPO RESINOIDS

Benzoin
Cistus Labdanum
Geranium
Geranium B
Oakmoss
Olibanum
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SOLE AGENTS IN UNITED STATES AND CANADA FOR

ROURE-BERTRAND FILS et JUSTIN DUPONT

GRASSE (A. M.) FRANCE

ARGENTEUIL (S. & O.) FRANCE

Engineers Visit Old Empire

Old Empire Manufacturing Chemists Inc. was recently host to six Danish industrial engineers who visited the United States under the auspices of the Foreign Operations Administration of the U. S. State Department and through the cooperation of the Ford Foundation Council on International Progress in management. The visitors, all professors at their respective universities, are K. E. Bredhal-Sorrensenn, Technical College; Carl Johansen, College of Mechanical and Electrical Engineering; Hans K. V. Jensen, Danish Institute of Technology; Niels T. Agersnap, Graduate School of Business Administration; and Poul A. Rosvall and Eric T. Jensen, Federation of Danish Industry. They were accompanied by Erik Svart of the U. S. State Department, who acted as interpreter.

The visitors were welcomed to the plant by Raymond Barnett, vice-president. Immediately afterward Sidney J. Pollack, production manager of Old Empire and faculty member of Columbia University, gave them a thorough and intensive lecture on the organization, production techniques and cost-accounting procedures of this unusual production operation.

DR. J. ROSCOE MILLER

Miller on Searle Board

Dr. J. Roscoe Miller, president of Northwestern University, was elected a member of the board of directors of G. D. Searle & Co. at the annual stockholders' meeting on April 24. This increases the number of board members from eight to nine.

Coutin, Chaleyer Exec. V. P.

Pierre J. Coutin, formerly vice-president of Roure-Dupont, Inc., has joined Ph. Chaleyer Inc. as a director and executive vice-president. He will assume his new office on June 1, according to Philip Chaleyer, president.

D & O Aerosol Lab. Completed

Dodge & Olcott has constructed a new laboratory, completely equipped for the filling and testing of aerosol packages. Both an Aerosol Pressure Filling System and a Cold Filling System have been installed, as well as a special water bath for testing finished cans for leakage after sealing, and a corrosion box for shelf life experiments.

Aerosol can containing shave cream being filled by pressure filling system in new Dodge & Olcott Laboratory. All foam products use this manner of filling.

Aziza Purchased by Mauvel

The Aziza eye products business has been purchased by Mauvel, Ltd., according to Maurice Levy, president. The manufacturing and control laboratories are being moved to Mauvel's new plant in New Rochelle, N. Y., where Aziza products will be compounded and packaged by the same technicians as formerly.

General offices and showrooms will be at Mauvel's headquarters at 13 West 57th St., to which all orders, inquiries and correspondence should be sent.

Abbott Appointments

Norman A. Hansen, director of development, Abbott Laboratories, from now on will also direct the coordination of package development in addition to his present duties.

Fred J. Kirchmeyer has been promoted to director of New production coordination. He will continue to head the company's pharmaceutical research department but will have the additional responsibility of coordinating various phases of the work required to prepare new pharmaceutical products for marketing.

Dr. Edward J. Matson, assistant director of research, has been promoted to director of scientific relations. He will be responsible for the company's relationships with the professional medical associations and with various federal, state and municipal regulatory agencies.

Dr. Arthur W. Weston, assistant head of organic research, has been named assistant to the director of development.

Dr. Kenneth E. Hamlin, Jr., group leader in organic research, has been promoted to assistant head of organic research to succeed Dr. Weston.

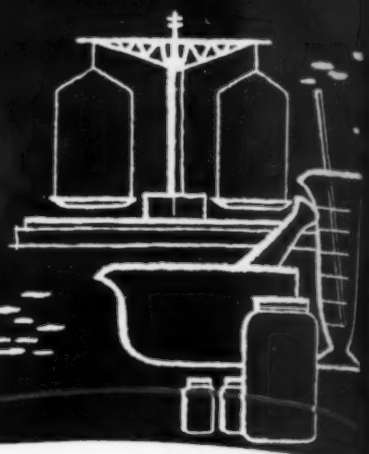
Dr. Warren J. Close has become group leader in organic research.

Coulter, Sales Mgr., Taylor

Thomas H. Coulter has been appointed sales manager of the Taylor Laboratories and will center his activities around the home office at Houston, Texas. He had formerly been vice-president in charge of sales and a member of the board of directors of the J. B. Roerig & Co.

Eastern representatives of Eaton Laboratories meeting to review rapid development of new nitrofuran, Furadantin. Left to right, seated: H. G. Stevenson, special government representative; F. M. Ault, divisional manager of southeastern and southwestern areas; Dr. Marinus Van Weele, medical department; Dr. P. F. McLeod, acting medical director; J. T. McHugh, district manager, N. Y.-Penna. area; D. J. Gallagher, district manager, Phila. area; and H. E. Marple, district manager, midwestern area. Standing, are Eaton sales representatives. Second row: E. F. Gruss, J. J. Ulatowski, L. W. Schelle, L. M. West, W. E. Meier and C. R. Orchard. Third row: J. S. Stroup, W. D. Paulussen, E. C. Wiegand and W. Y. Perez.

One of these
HEYDEN
CHEMICALS...



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you make a
GOOD product
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- Benzyl Chloride
- Benzoates
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- Formaldehyde
- Glycerophosphates
- Guaiacols
- Methenamine
- Parasepts®
- Propyl Gallate
- Resorcinol
- Saccharin
- Salicylamide
- Salicylates
- Tolyl Aldehyde

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FINE HEYDEN CHEMICALS

Chemical Progress Week May 17-22

du Pont Sells Reodorant Line

E. I. du Pont de Nemours & Co. has sold its industrial reodorants business to Rhodia, Inc. This line, known as "Alamask" industrial reodorants, will now be produced and marketed by Rhodia.

A number of du Pont's manufacturing and technical employees have transferred to Rhodia to carry on the production of the "Alamask" line. Some of du Pont's sales engineers and sales personnel will assist the firm in handling the sale of the reodorants until replacements are trained to take over.

B. K. Tremaine, who has been associated with du Pont's sales and technical development of industrial reodorants since their inception, is on loan to Rhodia as acting technical director. Norman W. Kent, who has been handling sales development of industrial reodorants in the petroleum industry, is also on loan to the company, as acting sales manager for the petroleum industry.

Toilet Goods Ass'n. Convention Committee for 19th annual convention, held at Waldorf-Astoria Hotel, New York, on May 11, 12 and 13. Standing, left to right: John Duncan, Hazel Atlas Glass Co.; Lee Simmons, Imco Container Corp.; Chauncey M. Depew, van Amerigen-Haebler, Inc.; John L. Foy, Publicker Alcohol & Chemical Sales Corp.; and Norman Liman, the Lord Baltimore Press. Seated, are: Frances Kiernan, C. H. Forsman Co.; Carolyn Jackson, Hudnut Sales; Kathryn Colton, Morningstar-Nicol, Inc., and co-chairman of the committee; Neva Bradley, Daggett & Ramsdell; and Margaret Ryan, Parfums Schiaparelli. H. Robert Miller, White Metal Mfg. Corp., also co-chairman of committee, was unable to be present when photograph was taken.

Hooker Exec. Changes

Harris C. Miller has been promoted by Hooker Electrochemical Co. from sales representative in the New York district to assistant district sales manager of the company's New York district sales office.

Dr. Frank W. Long has been transferred from the research and development department to the sales development group of the sales department.

Printon, Nopco Chairman

Thomas A. Printon, president of Nopco Chemical Co., has been elected chairman of the board as well as president. He succeeds Charles P. Gulick who has become honorary chairman of the board. Mr. Printon has been with Nopco since 1922. A director of the company since 1936, he has held the office of president since 1949.

On European Trip

John H. Montgomery, president of Fritzsche Brothers, Inc., and Mrs. Montgomery recently left for a two-month visit to Europe. They will drive through Italy, France, Switzerland and Germany on a business and pleasure trip, taking in areas responsible for the supply of many of the firm's important raw materials.

They will return late in June.

Ciba Research Director

Dr. Emil Schlittler has been appointed director of research of Ciba Pharmaceutical Products, Inc., according to T. F. Davies Haines, president. He replaces Dr. Fredrick F. Yonkman, who is now vice-president in charge of research. Dr. Schlittler will continue to hold his former position of director, division of chemical research.

Armour Office at Kankakee

Armour & Co. is planning to construct an administration building at the Armour Pharmaceutical Center near Kankakee, Ill., to accommodate the general offices of the Armour Laboratories now at 520 N. Michigan Ave., Chicago.

Work is expected to start this summer, and the building is scheduled to be completed in the fall.

The Pharmaceutical Center was opened last year to manufacture ACTH, trypsin, intrinsic factor, insulin, gamma globulin and other pharmaceuticals. Location of the general offices at the Center will permit better coordination of the various departments of the business, according to E. L. Patch, general manager.

Shulton Seeks Injunction

Shulton, Inc. has instituted an action against the Alfred D. McKelvey Co. in the United States District Court for the district of New Jersey, seeking an injunction, damages and accounting for profits upon allegations of such unfair competition and trade-mark infringement.

Wargell Heads Bundy Co.

Walter F. Wargell has been elected president of the C. M. Bundy Co., private formula pharmaceutical manufacturer. He had formerly been vice-president and assistant to the president at Strong Cobb & Co.

THOMAS A. PRINTON

DR. EMIL SCHLITTLER

MORRIS J. ROOT

Barr & Co., Expansion

G. Barr & Co. is opening an aerosol packaging plant in the New York area by June 1, according to George Barr, president, which is part of an extensive expansion program. Richard Neiss, formerly engineer with Precision Valve Co., will be in charge of engineering. This new plant will extend the manufacturing services of the company to the East Coast, thereby greatly facilitating its handling of products to be distributed in the eastern part of the United States.

Barr has just completed a new laboratory in its Chicago plant which increases its facilities for research and product development in aerosols. The laboratory is also equipped to handle research and product development in cosmetic items other than aerosols.

Morris J. Root, formerly assistant research director of Rayette, Inc., has been named technical director of G. Barr & Co., while several technicians and chemists have been added to the laboratory staff.

Breck Exec. Changes

John H. Breck, Sr., formerly president of John H. Breck, Inc., has become chairman of the board. He has been succeeded as president by Edward J. Breck, previously vice-president and general manager. John H. Breck, Jr., treasurer, has become executive vice-president, and Constance Breck, Corporation clerk, has been named treasurer and corporation clerk.

Arthur W. Tosh has been promoted from sales director, drug and department store division, to vice-president in charge of sales and corporation director.

Suppositoria Labs. Opens

Suppositoria Laboratories, 4718 18th Ave., Brooklyn 4, has opened laboratories for the manufacture of Standard and Special Formulae Medicated Suppositories for the trade. The company has published a formulary which will be sent on request.

Kane, Ass't to President

Alan H. Kane has been appointed assistant to the president of Haelan Laboratories, Inc., according to Warren A. Ives, president. He will continue, at the same time, to hold his former post, director of the new products division.

Keeny Named Sales Manager

John R. Keeny, Jr., has been appointed sales manager of the newly created pharmaceutical division of the Hope Filling Machine Co. This firm has acquired all rights to manufacture and distribute the new Salser Tablet and Capsule Counter.

HAROLD E. FORTINER

Fortiner Appointed by Ciba

Harold E. Fortiner has been appointed manager of the planning and inventory control division, Ciba Pharmaceutical Products, Inc., according to T. F. Davies Haines, president. He had formerly been manager of pharmaceutical production.

He will be responsible for planning production, controlling inventories and directing purchasing, warehousing and distribution activities in Summit, N. J.

With Lueders 25 Years

Robert Leclerc became the 55th member of the Veterans' Organization of George Lueders & Co. last month when he completed 25 years with the company. He is head of the Montreal shipping department.

Beck with Phibbs Advg.

Frank K. Beck has joined the Harry C. Phibbs Advertising Co. as a copywriter and account executive. He had formerly been in the advertising department of Abbott Laboratories.

Sixtieth Anniversary celebration in honor of Frederick H. Leonhardt, chairman of the board and past president, Fritzsche Brothers, which was held at Waldorf-Astoria Hotel April 17. Mr. Leonhardt joined the firm on April 15, 1894. More than 400 guests, including executives, employees and all branch office personnel with 10 years or more of experience, attended the dinner-dance.

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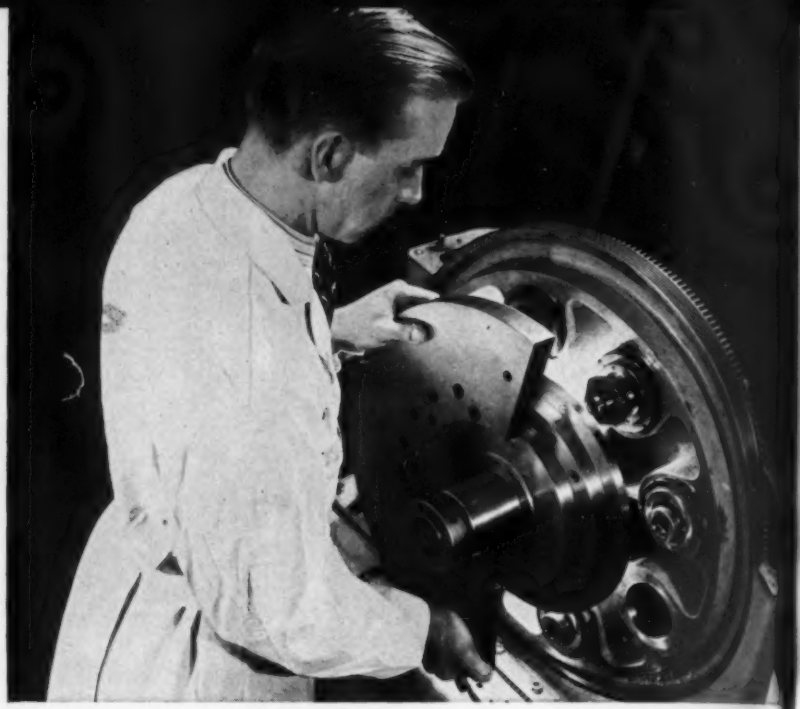
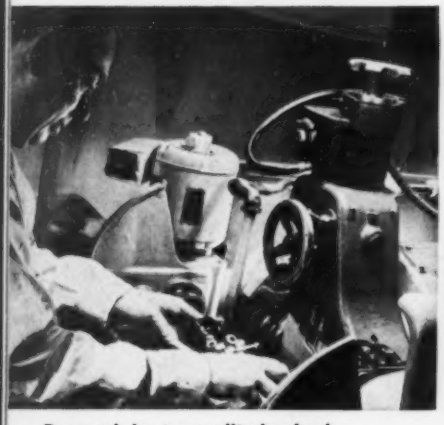
Taking the place of a million-and-a-half missing men

As you know, quality in the manufacture of closures is essential . . .

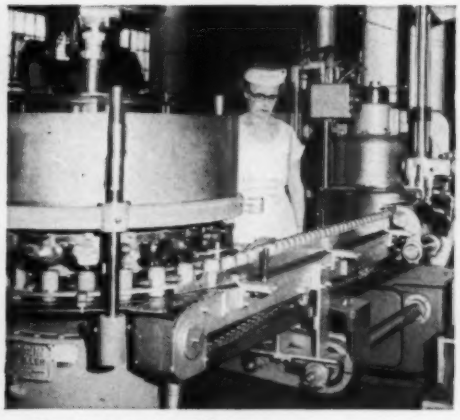
But today, closures must know how to sell, too. For there are a million-and-a-half *fewer* sales clerks in food stores now than there were in 1943, and 84 cents out of every purchase dollar of mass-consumed, fast-consumed items are sold by self-service. Your advertising, merchandising, and packaging are the only substitute your product has for these million and a half missing members of your sales force to the home market.



Quality is vital. Experts constantly try out new ideas . . . tear them apart to find trouble before it starts.



Research keeps quality in check
This machine accurately grinds contours on pre-hardened blanks for precision curling, knurling and threading of metal closures.



Greater speeds with better caps
Quality caps are built to take the abuse of high-speed lines. Result: greater capping efficiency.

Today's package must sell itself
Shoppers pause only 8 seconds before choosing a brand. Your package must know how to do a sales job and do it quickly.

BEFORE—

This package lacks the final touch. Good grooming from "head to foot" is the mark of a self-salesman.

AFTER—

Salespackage that's dressed to sell. See what a big difference a little change makes. Smart CLOSURE-label combination attracts instant attention.

METAL AND PLASTIC CLOSURES
AN (O-I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

ERNEST R. SLOAN

ARTHUR E. BRUHN

D. E. BUDGETT-MEAKIN

Sloan Named Plant Manager

Ernest R. Sloan has become plant manager of Charles of the Ritz, Inc., replacing Dr. V. Caspar who retired on March 1. Mr. Sloan had been assistant plant manager for the past year and a half.

Traffic Award for Magnus

Percy C. Magnus, president, Magnus, Mabee & Reynard, Inc., has received the Ralph Horgan Traffic Safety Award, an inscribed gold wrist watch, in recognition of his outstanding contributions to traffic safety as president of the Citizens Traffic Safety Board of the City of New York.

The presentation was made at the Annual Dinner of the Greater New York Traffic Council at the Hotel Statler, April 8.

Elected Trustees by Columbia

Dr. J. Mark Hiebert, executive vice-president of Sterling Drug, Inc.; Robert B. Magnus, vice-president of Magnus, Mabee & Reynard, Inc.; Jacob Tischenkel, president of the Hotel Astor Pharmacy; and Charles P. Walker, Jr., executive vice-president of van Ameringen-Haebler, Inc., have been elected to the board of trustees of the Columbia University College of Pharmacy, according to Myron Walker, chairman of the board.

Riehl Address ADACIOM

Harry W. Riehl, president and general manager of the Better Business Bureau of St. Louis, spoke before the Associated Drug & Chemical Industries of Missouri on May 12, on the subject, "Combatting Advertising Frauds." He explained how modern business institutions are subjecting themselves to strict selling censorship for the purpose of protecting consumer confidence in advertising and business. Mr. Riehl told how misleading and deceptive schemes are investigated.

Bruhn Marks 40th Year

Arthur E. Bruhn, chief clerk in the Chicago office of the New Jersey Zinc Sales Co., celebrated his 40th anniversary with that company on April 8.

Drug Officers Installed

Angelo LaFrance, general purchasing agent, Strong, Cobb & Co., was installed as president of the Cleveland Drug & Chemical Club on April 22, along with the following officers: George K. Huggins, district sales manager, Brockway Glass Co., as vice-president; Albert W. Locuoco, research director, Center Chemical Co., secretary; and John W. Bisch, Owens-Illinois representative, treasurer. Installed as directors were Clifford Sands, Michael A. Lauria, Sam Katz, Thomas B. Chadwick, Harry Martinson and Carl Fuller.

Farley with Huisking

Walter H. Farley, purchasing agent for J. T. Baker Chemical Co. since August, 1951, is now associated with Charles L. Huisking & Co. in a sales capacity.

Appointed by Atkinson

D. E. Budgett-Meakin has been appointed chairman and managing director of J. & E. Atkinson. He has been associated with the Atkinson overseas business since 1935 and has a wide and thorough knowledge of the perfumery and toilet preparations business.

Cifelli in New Law Firm

Thomas Cifelli, Jr. and George D. Richards, patent attorneys, have formed the firm of Richards & Cifelli for the practice of patent, trade-mark and copyright law. The offices are at 744 Broad St., Newark 2, N. J.

Gutcheon with Coppertone

R. Bernard Gutcheon has been appointed West Coast district manager for Coppertone Sales Corp., distributor of Coppertone Suntan Oil and Creams. He had formerly been head of the firm which previously distributed these products on the West Coast.

Members of Smith, Kline & French Laboratories' most recent graduating class who have completed SKF's intensive training course. Left to right, back row: W. S. Folgert, J. H. Card, J. J. Artingstall, M. J. Metcalfe, M. O. Backen, B. L. Butler, R. E. McManigle and R. W. Doll. Middle row: E. J. Gibney, J. Taylor, G. W. Torrance and D. Taylor. Front row: W. B. Owens, W. A. Strawn and W. Langdon.

LOOK at the sales advantages offered your product by G-11®

(Brand of Hexachlorophene)

The market for products containing G-11 is an established, growing market with virtually unlimited opportunities for profitable development.

Few products have ever been studied so exhaustively and given such unanimous acclaim by authorities. G-11 is recognized as the proven, effective and non-irritating antiseptic chemical that offers outstanding hygienic and deodorizing advantages.

Years of safe, successful use by millions of people assure the continued success of your products containing G-11.

As the originator and producer of G-11, Sindar offers you the benefits of its scientific knowledge, practical marketing experience and technical service in using it to the best advantage in your soaps, detergents and cosmetics.

Bulletins are available on:

- **Physical and Chemical Properties**
- **Toxicological Properties**
- **Bacteriological Properties**
- **Cosmetic Use**
- **Soap and Detergent Use**
- **Literary Abstracts**

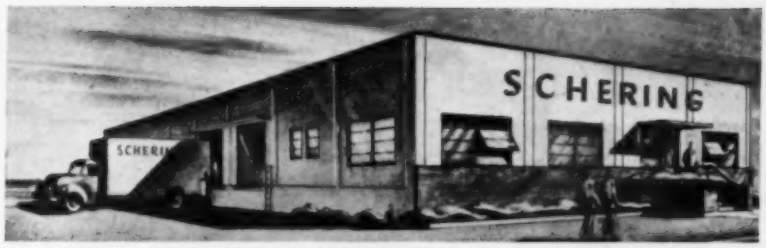
SINDAR® Corporation
Industrial Aromatics and Chemicals

330 West 42nd Street • New York 36, N. Y.

Branches: Philadelphia • Boston • Cincinnati
Detroit • Chicago • Seattle • Los Angeles • Toronto

Schering Div. in New Quarters

Schering Corp.'s western division is scheduled to move into enlarged facilities at San Leandro, Calif., in July, according to Franklin K. Johnson, western division manager. The new office and warehouse will provide 12,000 square feet of unobstructed space on one floor at truck level. Provision has also been made for future expansion.



New and enlarged office and warehouse of Schering Corp.'s western division in San Leandro, Calif., which the company will occupy in July.

T. W. SHARP

Sharp Appointed by Bakelite

T. W. Sharp has been appointed manager of the newly-created Flexible Packaging Materials division, Bakelite Co., a division of Union Carbide & Carbon Corp., according to C. W. Blount, vice-president in charge of sales.

Synarome Corp. Established

American Aromatics, Inc., has formed Synarome Corp. of America which has exclusive sales and distribution rights in the United States and Canada for Synarome products, according to Rene H. Bourguet, president of both companies. Inventory of Synarome specialties has been transferred from the Dow Chemical Co. to the Synarome Corp., 24 East 21st St., New York 10.

Charles E. Handsaker will service the Synarome accounts.

Richards Honored by Lueders

Martin Richards, foreman of the distilling department, George Lueders & Co., has become member of the company's Veterans' Organization in honor of his 25 years with the company.

He was guest of honor at a luncheon held at the Drug & Chemical Club last month.

Named Packaging Designer

Mrs. Mac Jones has been appointed packaging designer of Tussy Cosmetiques, having succeeded Gloria Van Fleet Williams who resigned to join her husband in the R. R. Williams Co.

Hollenberg Heads Knapp Prods.

I. R. Hollenberg, formerly president of Van Dyk & Co. and executive vice-president of Summit Chemical Products, has been appointed president and technical director of Knapp Products Inc.

Freeman with Upjohn

Henry Freeman has been appointed to the patent law department of the legal division of the Upjohn Co., according to L. D. Harrop, vice-president and general counsel. He had formerly been with the Standard Oil Development Co.

Emery Appointments

J. E. Quinty has assumed sales responsibility for all of Emery Industries' fatty acids and derivatives, plasticizers and textile oils in northeastern Pennsylvania and parts of northern New Jersey. He had previously been assigned to the home office sales staff.

W. J. Major, formerly associated with the technical division of General Electric Co., has been appointed to the chemical sales staff of Emery.

Chem. Ass'n Golf Schedule

The Chemical and Allied Industries Association of Michigan announced the following schedule for golf outings, according to Bill Harlton, golf chairman: Dearborn Country Club, June 29; Meadowbrook Country Club, July 27; Pine Lake Country Club, August 24; and Plumb Hollow Country Club, September 28.

The August outing will be Ladies' Day.

Webb—Braitmeyer

Richard D. Webb, secretary of W. J. Bush & Co., recently married Anne Braitmeyer, who was formerly associated with the company as executive assistant. Mr. Webb is the son of Richard R. Webb, treasurer of the company.

WALTER R. NAY

Walter R. Nay

Walter R. Nay, Chicago regional manager of Mallinckrodt Chemical Works, at the age of 51, met an untimely death while swimming with his family at Pompano Beach, Florida, on April 6. He and Mrs. Nay, together with their nine-year-old son, were vacationing in Florida immediately following the annual meeting of the American Pharmaceutical Manufacturers' Association at Boca Raton.

He joined Mallinckrodt in 1933 as assistant manager of the Chicago office, becoming manager in 1935, and manager of the north central states region in 1949.

He is survived by his mother, Mrs. Frances Nay; his wife, Betty Burke Nay; a son, Marshall; two daughters, Mrs. Quinn Ogren and Mrs. Robert Phillips; two brothers, David and Marshall; and a grandson, Robert Phillips, III.

Percy A. Broderick

Percy A. Broderick, secretary of Shulton, Inc., died of heart disease on March 30. He had been with the company since 1939.

Surviving are his wife, Mary, a daughter and five sons.

Claude T. Perez

Claude T. Perez, representative of Ungerer & Co., died on April 18 at 60 years of age. He had been with the company for 11 years.

An Indian medicine man stirs his special concoction for the sick, while simultaneously warding off the evil spirits with magic instruments.

The Origin of FLAVORED MEDICINALS

Our 155th Year of Service

D&O ESTABLISHED 1798

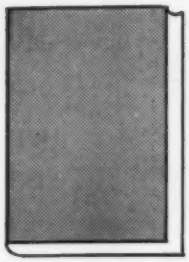
The cold sufferer of today who swallows his first spoonful of a prescribed cough medicine will frequently find it pleasantly flavored with some kind of fruit or berry... very likely raspberry or cherry. It might surprise him to learn, however, that the North American Indian medicine men used these same ingredients in their potions and mixtures. Wild Cherry was given for coughs, Black Cherry for pain in the chest and Black Raspberry for stomachache. Raspberry and Cherry are still popular pharmaceutical flavors and have been adapted for this use to many different medicinals in the D&O Product Development labs. Individual experiment is required in each instance and the D&O Laboratories are at the service of manufacturers desiring to develop special flavors for pharmaceuticals. Consult D&O.

DODGE & OLCOTT, INC.

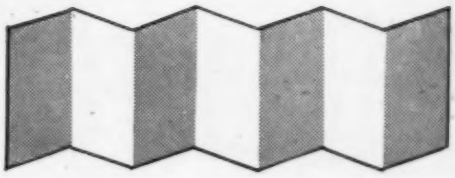
180 Varick Street • New York 14, N. Y.

Sales offices in principal cities

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • DRY SOLUBLE SEASONINGS



Trade Literature



Organic Acids Booklet

"Organic Acids" is the title of a new 32-page booklet published by Carbide & Carbon Chemicals Company, 30 East 42 Street, New York 17. The booklet discusses eight organic acids (acetic, butyric, 2-ethylbutyric, caproic, 2-ethylhexoic, crotonic, sorbic, and succinic acids).

Vitamin B_{12} Supplement

Commercial Solvents Corporation, 260 Madison Avenue, New York 16, has issued Technical Data Sheet No. 5 on Vitamin B_{12} Supplement in animal nutrition.

Emulsol Bulletin

The Emulsol Corporation, 59 East Madison Street, Chicago 3, has released a new technical bulletin, No. 40, describing Emcol Mas, a fatty amide high melting point wax which is used to opacify shampoos, raise the melting point of glyceride and paraffin oils, and other applications.

Coronet Safety Rule Book

Coronet Phosphate Company, a division of Smith-Douglass Company, has issued a Safety Rule Book which was published only after long and-detailed negotiations with the International Chemical Workers Union, Local 37, A.F. of L. Smith-Douglass Company, Norfolk 1, Virginia. It will be pleased to send copies of the booklet to interested parties.

Astringen Bulletin

Robinson, Wagner Company, 110 East 42 Street, New York 17, has issued a bulletin on Astringen, which is the trade-marked name of a complex form of aluminum hydroxy chloride, made by the company and recommended for use in antiperspirants and after - shave lotions.

Rohm & Haas Booklet

Rohm & Haas Company, resinous Products Division, Washington Square, Philadelphia 5, has compiled a 24-page booklet entitled "If You Use Water." Illustrated liberally with two-color flow diagrams, the booklet discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange: softening, dealkalization, and de-ionization.

Information on Niacin

Barrett Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, has published a 44-page booklet entitled Niacin. The booklet gives complete information on this vitamin in human nutrition, animal nutrition, and pharmaceutical applications. Also given are miscellaneous clinical applications and effects, analytical methods, and a bibliography.

Acetonitrile

Carbide and Carbon Chemicals Company, 30 East 42 Street, New York 17, have issued an 8-page bulletin (F-7501) on acetronitrile.

D & O Price List

Dodge & Olcott, Inc., 180 Varick Street, New York 14, has released their price list in a new handy pocket-size designed for quicker, easier reference and general convenience. The attractive booklet will be published quarterly, the next one being due in June.

For the Packaging Engineer

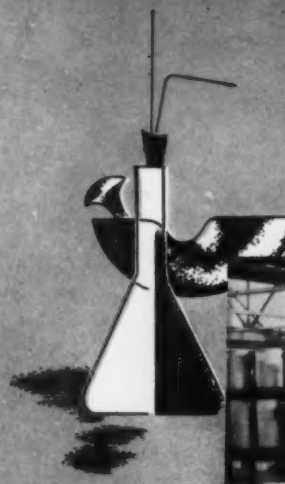
New Techniques for the Packaging Engineer is a publication issued by the Packaging Institute, 342 Madison Avenue, New York 17, and selling for $1.25. The book contains three papers on the work of the packaging engineer, namely: Quality Control Enters the Packaging Department, by A. F. Deuble, of Johnson & Johnson; Maintaining Proper Packaging Specifications, by Clemens Koehler, of Koehler & Worden; and Packaging Faces the Incentive System, by S. G. Stearns, of Merck & Co. C. M. Elliott, of Eastman Kodak Company, has written the introduction.

Burtonite Facts

The Burtonite Co., Nutley 10, N. J., has issued a four-page booklet on Burtonite No. 7, which is described as "a new and better gum from guar seeds."

Book on P. Robertet

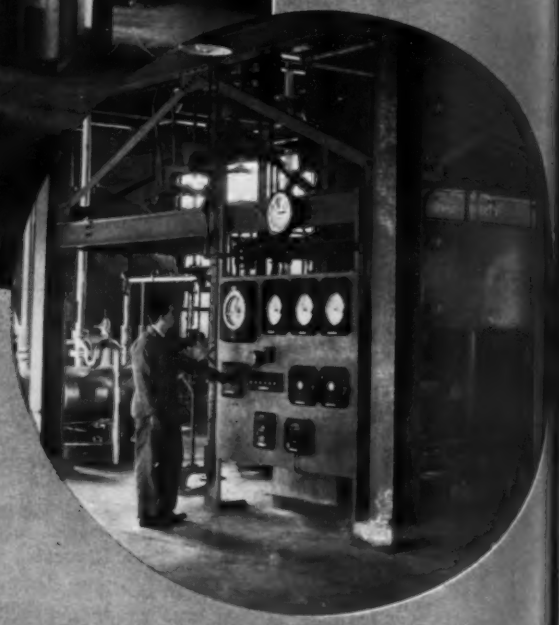
P. Robertet, Inc., 125 East 23 Street, New York, is distributing a beautiful book issued by P. Robertet & Cie, presenting the parent company of Grasse, France.



"Purity by the ton"

LARGE AVAILABLE STOCKS

PRECISION MANUFACTURE



For manufacturing drugs and pharmaceuticals you need a large available supply of fine chemicals, and you need these chemicals made to precise standards. J. T. Baker Chemical Co. offers you both features.

In moderate quantities, or runs of thousands of pounds per day, Baker fine chemicals are made to exacting standards of chemical purity and physical uniformity. This helps cut your production time and cost.

For your convenience, large warehouse stocks of a wide variety of chemicals are kept on hand. This assures prompt shipment of the fine chemicals you need, and enables us to provide special handling of emergency orders. Many of these chemicals are listed below and on the next page.

Most leading drug and pharmaceutical houses help to protect their precious trademark with Baker "Purity by the Ton." Perhaps you, too, would like this added safeguard. Why not write for prices and samples of the fine chemicals used in your formulas?

J. T. BAKER CHEMICAL CO.
Executive Offices, Phillipsburg, New Jersey

A LIST OF BAKER FINE CHEMICALS

Acetic Acid
Aluminum Sulfate
Ammonium Acetate
Ammonium Chloride
Ammonium Hydroxide
Ammonium Nitrate
Ammonium Sulfate
Ammonium Thiocyanate
Barium Sulfate
Benzoic Acid
Bismuth Nitrate
Calamine
Calcium Bromide
Carbon Disulfide
Dextran (Clinical Grade)
Ferrous Sulfate
Hydrochloric Acid
Iodine
Iron
Lactic Acid
Lead Acetate
Lithium Carbonate
Magnesium Oxide
Mercury Bichloride
Mercuric Acetate
Mercuric Oxide
Mercuric Sulfate
Mercurous Chloride
Nicotinamide
Nicotinic Acid
Nitric Acid
Penicillin
Petroleum Ether
Phenobarbital
Phenolphthalein
Phenothiazine
Phenyl Salicylate
Phosphoric Acid
Phosphorus Pentoxide
Phthalyl Sulfacetamide
Potassium Acetate
Potassium Bromate
Potassium Chloride
Potassium Hydroxide
Potassium Iodate
Potassium Iodide
Potassium Nitrite
Potassium Persulfate
Potassium Sodium Tartrate
Potassium Sulfate
Potassium Thiocyanate
Saccharin Sodium
Salicylic Acid
Silicic Acid
Sodium Acetate
Sodium Hydroxide
Sodium Sulfacetamide
Sodium Thiocyanate
Stannous Chloride
Strontium Bromide
Sulfacetamide
Sulfanilamide
Sulfathiazole
Sulfuric Acid
Tannic Acid
Terpin Hydrate
Zinc Chloride
Zinc Sulfate

More on Page to the Right

to make your products better

FOR INJECTABLES

Ammonium Citrate
Antimony Potassium Tartrate
Bismuth Subsalicylate
Calcium Chloride
Dextrose
Ferric Ammonium Citrate (green)
Magnesium Sulfate
Mercuric Iodide
Procaine Hydrochloride
Silver Nitrate
Sodium Benzoate
Sodium Bisulfite
Sodium Chloride
Sodium Citrate
Sodium Iodide
Sodium Salicylate
Sodium Thiosulfate

Pharmaceutical manufacturers of injectables know that, when the fine chemicals they require come from Baker, they can always depend on them for purity to the decimal. Some of the Baker fine chemicals for injectables are listed here. Among these, or in the Baker line, there is probably the right fine chemical for your product.

FOR ANTACIDS

Aluminum Hydroxide
Bismuth Subcarbonate
Bismuth Subnitrate
Bismuth Subsalicylate
Magnesium Carbonate
Magnesium Hydroxide
Magnesium Oxide
Magnesium Phosphate
Magnesium Trisilicate

Baker Antacids find wide popularity because their chemical purity is consistently high, usually exceeding the standards established. Their physical properties are tailored to the needs of pharmaceutical and drug manufacturers. For your protection Baker Antacids are packaged in containers designed to preserve their high qualities.

FOR SEDATIVES

Acetanilid
Acetophenetidin
Acetylsalicylic Acid
Ammonium Bromide
Chloral Hydrate
Chloroform
Potassium Bromide
Sodium Bromide
Sodium Pentobarbital
Sodium Salicylate

Fine chemicals are vital ingredients in the manufacture of sedatives, and the reputation of your product and your good name depend upon them. When you buy Baker Fine Chemicals for your sedatives, you are assured of utmost purity and absolute uniformity, lot after lot, for ease in manufacturing to rigid standards, and precise dosage.

FOR ANALGESICS AND ANTIPYRETICS

Acetanilid
Acetophenetidin
Acetylsalicylic Acid
Methyl Salicylate
Procaine Hydrochloride
Salicylamide
Sodium Salicylate

An analgesic preparation can leave no room for doubt. It must act effectively—quickly and safely. For this reason many drug and pharmaceutical manufacturers buy their fine chemical ingredients from Baker. For analgesics or antipyretics, Baker Fine Chemicals provide highest purity, stability, consistency, and constancy of pH in solution when mixed with buffer materials.

Baker CHEMICAL

Baker Industrial Chemicals

"Purity by the ton"

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Unhappiness in Jobs

What is wrong with business organization or methods which make the executives running business discontented and unhappy? In the course of my travels many people talk to me confidentially about their personal problems. General managers, vice-presidents by the dozen, plant managers, sales managers, executive chemists. Only a few express dissatisfaction with their salaries. Some feel no hope for the future of their organizations. Some—quite a few—feel that progress is barred by family or family satelites.

If I could hire all the men I know who are dissatisfied with their companies I could staff the largest organization in the trade. Comparatively few of the men want to change their jobs; they'd like to stick it out in the hope that conditions within their own organizations will change for the better. I am convinced that the majority of the men who have talked with me on this subject really like their jobs; they work hard and really want to do their best. But they feel that something is fundamentally wrong with the atmosphere of the organizations with which they are connected. In many organizations discontent is so rife that I can sense it in the atmosphere within an hour after I have visited them. Much of this unhappiness is caused by personality clashes. Most of it I think by bad leadership.

I know of course that everybody gripes. I know also that you can never judge an organization pattern by the complaints of an individual. But when several individuals in the same organization gripe about the same things then there is reason to believe that something is wrong with the organization and its leadership. When such conditions are apparent I always blame Mr. Bigbrow. He's the president and driver of the team, and since no team will ever be composed of robots it is up to the driver to control some individuals with a loose rein and others with a tight one. Occasionally one of the individuals needs a touch of the whip, others may need a hell of a good cut once in a while. There is, it seems to me, a prevalent belief that everybody can be treated alike and handled in the same way. Such a belief is stupid. But many company presidents, in their honest desire to avoid favoritism, lean over backward in their efforts to treat everybody alike. It's a mistake. Men are variously hardheaded, thickskinned, sensitive, moody; they are introverts and extroverts, and none of these qualities has anything to do with their abilities excepting when such qualities are so pronounced that they present an insurmountable barrier. Then they are hopeless. But in business I have observed that men seldom have such pronounced personality quirks. As a rule they can be handled if the guy at the top will take the trouble to find out how to handle them.

Handling Men

Nothing is more instructive than a case history in learning how to handle men. In this instance it is a personal case history. In the year 1927 I was plant manager of the old Marinello Company when it was among the Big Ten in the cosmetic industry. The president of the company was the late Neil R. Andrews and my boss, the general manager was Dr. Ralph L. Evans, now president of Evans Chemetics and Evans Research Associates.

Neil Andrews was the typical flamboyant, cosmetic sales type, who knew nothing about costs or organization and cared less. He'd put on a big sales campaign or a special deal and no one outside the marketing organization would know anything about it until orders for special stuff began flooding in, usually with immediate shipping dates.

One time it was decided to open the European market. Andrews went to Europe for that purpose and he came back with vast stock-up orders for several European countries. Nobody in the production organization knew anything about these orders for several weeks afterward until they suddenly landed on my

Pacquins . . .

famous for

smoothing skin . . .

use PNEUMATIC . . . famous for smoother labeling

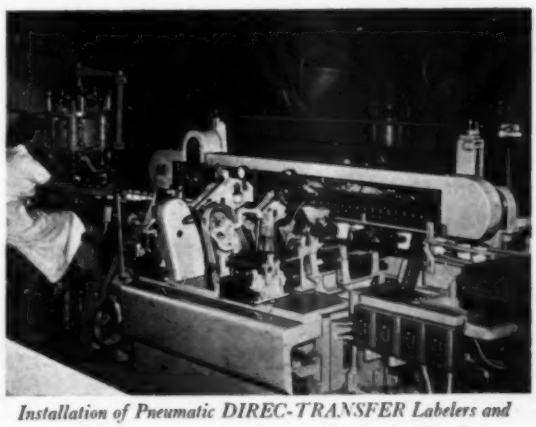
"Smooth as silk" could describe the way milady's skin feels, after using PACQUINS . . . or the way Pneumatic filling and labeling machines do their job in PACQUINS model plant.

A glance at the PACQUIN containers will tell you . . . this is no easy labeling job. It calls for precision of the highest order — the kind of precision that Pneumatic equipment can *always* be depended on to give, day in and day out, at top speeds.

Built according to the highest engineering and manufacturing standards in the field, Pneumatic machines operate with money saving efficiency, handling a great variety of world famous products. If you, too, are looking for "lower cost per container" . . . better look Pneumatic's way.

PNEUMATIC SCALE CORP., LTD., 70 Newport Avenue, Quincy 71, Massachusetts. *Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England*

Canadian Division: Delamere & Williams Company, Ltd., Toronto



Installation of Pneumatic DIREC-TRANSFER Labelers and Rotary Cappers in Pacquins plant at Glen Rock, New Jersey.

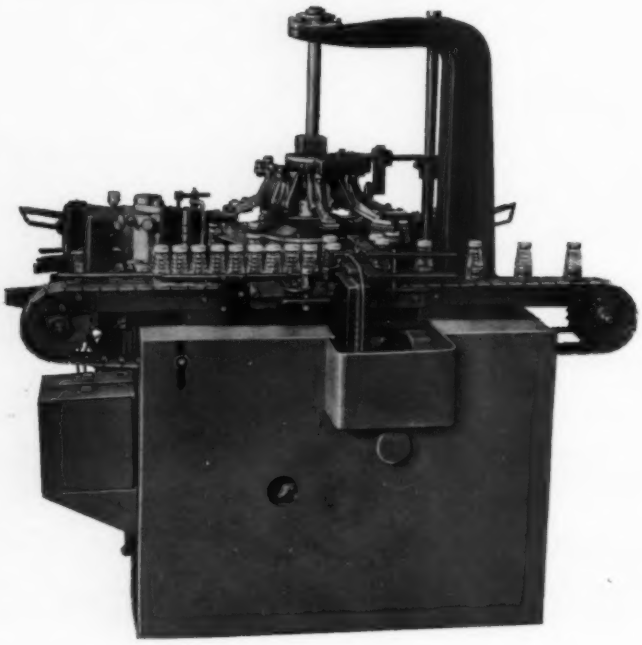
PNEUMATIC PACKAGING AND BOTTLING MACHINERY

NO OTHER FULLY AUTOMATIC LABELER CAN

GIVE YOU ALL THESE Extra ADVANTAGES

You'll find them only in

the PONY EXPRESS®



1. Handles oval, square, round and tapered shapes.
2. Applies glue from edge to edge for elimination of blisters.
3. Uses vacuum principle of label handling to assure perfect register and minimum glue attention.
4. Twin roller gluing (no scraper bar) - with micro glue control to prevent glue smears on containers.
5. Requires NO OPERATOR.
6. Petty-Cash Change-parts.
7. Clamps containers into position prior to moving container toward labeling station, to avoid faulty label register.
8. Change-over almost as quickly and simply as the Pony Labelrite.
9. Labels are not glued unless signaled by an incoming container.
10. Self-cleaning feature.

The PONY EXPRESS is a logical development incorporating all the precision features which have made an unprecedented reputation for the Pony Labelrite. Being fully automatic, the FULL rated capacity (70 per minute) is available for sustained production.

Here, for the first time, is an automatic which is not "single-purpose", or restricted to a greatly limited range of work,—usually the case with ordinary automatic machinery.

We'll gladly arrange a demonstration!

539

NEW JERSEY MACHINE Corporation

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FACTORY SALES AND SERVICE BRANCHES
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MAIN OFFICE & FACTORY: 1552 WILLOW AVENUE, HOBOKEN, N. J.

desk with a rush memorandum from Andrews that all the stuff—several hundred items with several foreign language label requirements—was to be on a certain ship leaving within a fortnight.

That did it. I blew steam from every pore. I dictated a memorandum to Evans in which I expressed in unmistakable terms my opinion of Andrews, the management in general, the company—the works. My secretary said, "You don't really want me to take this memorandum to Dr. Evans, do you? You'll be fired. It's insulting."

"The hell I don't," I barked." Take it to his office right away."

In a few minutes the phone rang. Dr. Evans would like to see me immediately. This was it. I was ready to tell him to shove the job where Paddy put the shilling. I was ready to sock him one in the snoot or anybody else who happened to get in my way.

When I belligerently walked into Evans' office, ready to do battle, he was holding my memo in his hand and his face was blood red with anger. But when he spoke he didn't raise his voice at all. He merely asked, "Frank, have you got a copy of this memorandum in your files?"

This unexpected query took the wind out of my sails a little bit. I didn't know what was coming next. So I answered, "Yes."

He handed me his copy of the memo and said quietly, "Tear them both up." And then he went on with his work, leaving me standing there thoroughly deflated and feeling lower than a heel. I didn't leave his office with my battle flags flying as I had expected; I left with my tail dragging. I got licked before I had a chance to put up my dukes.

It is needless to say that all the stuff was on the ship.

Long years afterward I asked Ralph why he didn't fire me there and then. He answered, "It would have accomplished nothing. We would have lost the best plant manager we ever had and you'd have lost the best damn boss you ever had."

He was dead right about the last part anyway. That's why I dedicated the first edition of "Modern Cosmetics" to him. To me he will forever be a swell guy.

Higher Education (Ph.D. and Up)

Every now and again I take a crack at the guys who have a lot of degrees but no sense and no command of the language. These are the persons who write the gobbledegook or officialese for the government. (I suspect they're mostly lawyers. Chemists and engineers as a rule can't write at all.) According to "Fortune" the army broadbrows—meaning personnel jokers—recently held a symposium. The commission that held the symposium has a title which should be perfectly clear to you unless you're a dope:

"Commission on Accidental Trauma of the Armed Forces Epidermiology Board."

Among the papers read were the following:

"Development of Stochastic Learning Models With Three or More Response Classes." (I will assign Fritz Degener to do a paper on this one for the next issue.)

"Stability: A New Equilibrium Concept for n-Person Game Theory." (This should be a cinch for Frank Dowe and he is hereby appointed to do an interpretive dance at the next convention to explain this one.)

"Groups Versus Individuals in the Solution of Eureka Type Problems." (A natural for Frank Reid. With gestures.)

"On the Multidimensional Analysis of Monotonic Single Stimuli Data." (No one in the industry has the intellectual capacity to deal with this one except Erbert Bye. I wonder if he will do as well on a single stimuli as he does on a double.)

Thought for Today

Tact is for people who know they are wrong.

—Bob Taft.

Belloc on Hygiene

"Of old when folk lay sick and sorely tried
The doctors gave them physic and they died
But here's a happier age: for now we know
Both how to make men sick and keep them so."

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

New Multi-U-Meter Liquid Filler

This entirely new type filler solves problems in filling new types of containers. It is semi-automatic. Handles any type liquid, any size or type of container. Its container handling mechanism is designed for efficiency in filling also plastic and odd-shaped containers that are awkward to fill on other types of machines due to lack rigidity of the containers.

The Multi-U-Meter Filler is available in Two-Tube and Four-Tube models. The Two-Tube model, efficient on all size containers, has fastest production on two-ounce to eight-ounce containers which sizes fill at a rate of 10 to 15 containers per minute. While the Two-Tube model serves most requirements to advantage, the Four-Tube model is desirable for increased production on slow flow rate liquids and on large containers.

Each Tube represents an individually controlled filling head. Each filling head is equipped with an individual timing device to automatically regulate accurate fill, relieving the operator's chores to handling of containers.

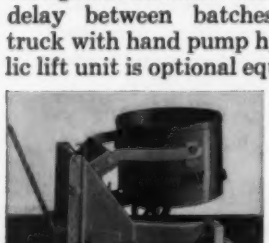
The Multi-U-Meter is most flexible in its quick adjustability for wide container range, volume control,

DAY means longer life span

DAY 100-gal. gearless type pony mixer at Eli Lilly & Co., Indianapolis, Indiana

✲ DAY combines rugged construction with precision engineering. That's why DAY Pony Mixers are delivering *extra* years of trouble-free, economical operation in plant after plant. DAY features result in higher production at a lower cost, protect the quality and uniformity of your product. An important feature is the interchangeable can unit—eliminates delay between batches. Lift truck with hand pump hydraulic lift unit is optional equipment. DAY planetary mixing action plus agitator blade contouring delivers radial and lifting mixing action over depth of can. DAY rugged construction is unique. A one-piece heavy cast iron frame assures absolute rigidity, quiet operation. Mixers are driven by time-tested internally geared head motors through roller chain and sprockets enclosed in dust tight guards, exclusive with DAY. Whatever your requirements, there's a dependable DAY pony mixer engineered to do your job — better — more economically. For complete information, call your nearest J. H. Day field engineer, or write direct for Bulletin 500.

RUGGED CONSTRUCTION



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DEPENDABLE DRIVE

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table height, etc. Nozzle changes for different flow rate liquids are made instantly by hand. The Multi-U-Meter Filler is a new product of the U. S. Bottlers' Machinery Co., 4015 N. Rockwell St., Chicago 18, Illinois. Bulletins are available.

Portable Refrigeration Unit

A unique Portable Refrigeration System, exclusively built by A. Daigger & Co., 159 W. Kinzie St., Chicago 10, Ill., is now on the market. This sturdy, sealed unit is designed to serve all your cooling requirements. Complete control to give any cooling capacity, large enough to cool your largest water bath, small enough to fit into your corner or a flexaframe set-up neatly.

The DAIGGER Portable Refrigeration System features a 0° F. Unit to meet exacting needs and has a variety of uses. Ideal for control of constant temperature work, replaces dry ice in small containers, temporary storage for unstable chemicals, cooling unit for fractionation columns, cool baths for thermometer calibration, a freezing stage for microscopes, power source for dry freezing and innumerable other uses!

This DAIGGER Portable Refrigeration System comes complete with six foot length of insulated tubing and a copper coil—the unit, of course, is flexible enough for coils of your own design.

Short Case Sealer

The advantages of lower packaging costs, increased output, and minimum installation needs were brought to numerous smaller drug and cosmetic processing industries this month with the introduction by the Elliott Manufacturing Company, Fresno, Cal. of its new Semi-automatic Extra Short Case Sealer.

This new machine occupies a scant 28 square feet of floor space and yet has a sealing capacity of from 200 to 600 cases an hour, depending on the length of the compression section.

Edward J. Derderian, secretary-treasurer of the Fresno, California, company and designer of the new case sealer, credits the speed of the compact machine to special compression rollers that give cases an extra squeeze after the glue application. Electrically heated, thermostatically controlled glue pots also add to the speed of the machine.

In spite of its compact size, the Elliott Extra Short Case Sealer can be adapted to handle cases ranging from six to 18 inches wide, nine to 24 inches long, and three to 20 inches high. In operations where cases are packed on a production line with the bottom flaps closed but unsealed, a special attachment is available which opens the bottom flaps for gluing without disturbing the contents of the case.

Special safety features and simplicity operation make the Elliott sealer additionally useful for smaller industries. A new type reversible safety switch automatically stops the machine should an irregular or improperly packed case become jammed in the gluing section. The same switch is used by the operator to reverse the machine for easy removal of the case, after which the sealer can be put back in operation without further interruption or adjustment.

The single glue applicator roller for the top case flaps and the single roller for the bottom flaps cut cleanup

and maintenance by 50 per cent. Since gluing and compression sections are built as a single unit, there is nothing to get out of adjustment in regulating the machine for different case sizes. Basic installation is limited to plugging the machine into a standard electrical connection.

The streamlined Elliott sealer also features one-piece construction of die-formed steel, welded throughout. There are no limit switches to break and only one motor is used to power the unit, thus minimizing maintenance costs and assuring long, trouble-free operation. The machine can be mounted on wheels for easy mobility, and extra drying rollers can be added by the user easily and inexpensively to step up capacity.

The Elliott Extra Short Case Sealer is available in five models ranging from the eight-foot model with a capacity of 200 cases an hour to the 18-foot model capable of sealing 1250 cases an hour.

Cowles Dissolver

For the first time manufacturers with difficult solution, dispersion or suspension problems can combine the operating simplicity and speed of the Cowles Ultrafast Dissolver with slow-speed, paddle-type agitation, Horton Meyer, vice-president of the Cowles Company, Cayuga, N. Y., has announced. The Cowles Company has developed a "Duplex Drive Dissolver" that combines a patented Cowles high-speed impeller with a gate-type scraper arrangement. The drive shaft of the high speed unit runs through the hollow, slow-speed drive. The slow speed attachment can be designed to scrape the sides of the tank, or it may be used as a slow speed agitator to run in either direction.

The slow speed agitator in combination with the high-speed impeller can be used for three primary purposes:

1. If the slow speed blades run in the opposite direction of the highspeed impeller, they will act as a

The man who knows his punches and dies says "Send for our Stokes booklets on 'What You Should Know about Punches and Dies' and 'How to Save Money on Punches and Dies' . . . and tell us how many you need."

"What Should You Know About Punches and Dies?"

"The answer is to get punches and dies which will make good tablets for the longest possible time.

"That was a problem to us over 50 years ago when we started to make tabletting machines. We soon found we had to make our own punches and dies.

"Now, after a half-century of experience we have a big department, skilled hands, all sorts of precision machines . . . just for making punches and dies.

"Lots of our experience is with *making* punches and dies; but a lot of it, too, is in *using* them in our own laboratory. So we've sorted out our knowledge and put what you should know in two booklets: 'What You Should Know About Punches and Dies' and 'How to Save Money on Punches and Dies'.

"They're the sort of booklets that are useful to everyone from the Purchasing Agent to the machine operator.

"Usually, when you buy a tabletting machine, you get an instruction book which gives plenty of good advice. But after several years, and many changes of operators, who knows what's become of the little instruction book?

"Our two booklets can be truly helpful. We've printed them in quantity, so if you need a batch, just say the word!"

F. J. STOKES MACHINE COMPANY
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STOKES MAKES: High Vacuum Equipment, Vacuum Pumps and Gages / Industrial Tabletting, Powder Metal and Plastics Molding Presses / Pharmaceutical Equipment

baffle, giving more intense mixing at the impeller.

2. Run in the same direction as the impeller, the slow-speed blades will help handle exceptionally difficult, viscous materials.

3. The slow speed agitator can also be used to hold a batch under gentle agitation while waiting for future use after preparation with the high-speed mixer.

Though the new machine was developed to solve a paint industry problem, Mr. Meyer emphasizes that the true market for the "Duplex Drive Dissolver" is unknown. The Cowles laboratories will be glad to

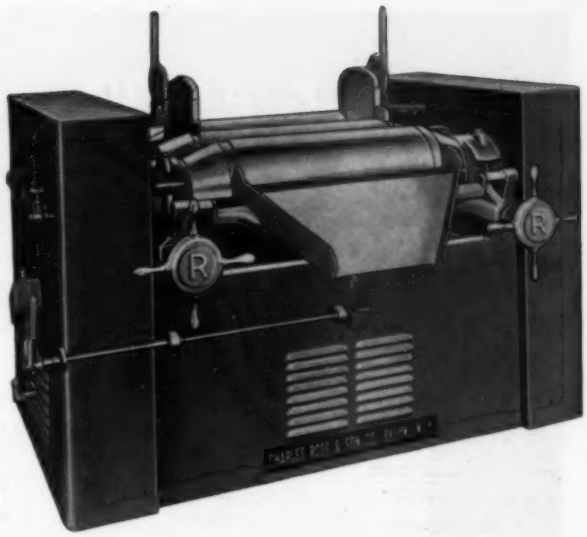
work on problems with all who are interested and feel that the new machine will help them solve solution, dispersion or mixing problems.

"The Duplex Drive Dissolver" is available in sizes from 100 to 1000 gallons. At the present time, all applications will be handled as special engineering jobs since the requirements for this type of equipment are extremely variable. The new unit will be available with or without tanks. However, if Cowles does not supply the tank, customers must supply Cowles engineers with certified drawings of their tanks so that the slow speed arrangement can be properly engineered.

High Speed Three Roll Mill

The new No. 52TC High Speed Three Roll Mills manufactured by Charles Ross & Son Co., Bklyn., N. Y. can be readily converted for use with either fixed or floating center roll operation.

A three-roll mill can now be operated as a conventional mill with fixed center roll and four point adjustment, or with floating center roll and two point adjustment. When differences in pressure between feed and takeoff rolls are desired, the center roll is in fixed position. When equalized pressures are preferred, the same



mill can be converted, within minutes, to have self-aligning or floating center roll. Conversion from one type of operation to the other is easily accomplished without special tools or kits, and without special skill by any operator.

The new Ross 52TC Mills feature a higher ratio of differential speeds for greatest shear. In addition, the apron is adjustable for raising or lowering knife contact point or varying apron angle on front roll. This flexibility permits apron to be raised or lowered to the most efficient takeoff position for light or heavy materials. A balanced apron provides constant uniform pressure of knife on front roll as the knife wears. This gives continuous thorough takeoff of material from front roll and, by preventing dispersed material from cycling back into the mill, gives maximum production.

Mills having manual adjustment of rolls are provided with ball thrust bearings on adjusting screws to facilitate turning of handwheels. New, larger, calibrated indicating dials assure parallelism of roll faces with corresponding dial readings.

The new versatile 52TC Mills are reported to give greater production, and assure top operating efficiency when one mill must meet the various milling requirements of different materials.

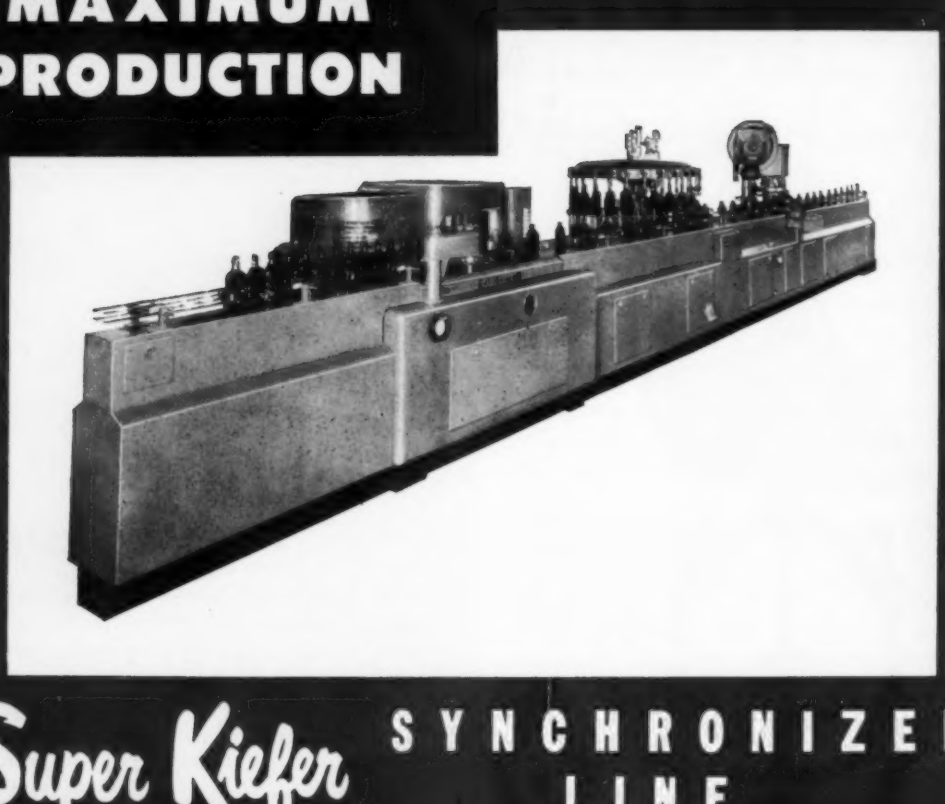
Table Model Net Weigher and Filler

A simple, new, table model Elec-Tri-Pak weighing and filling machine for the lower price market was introduced recently by the Triangle Package Machinery Company. The new weigher is a semi-automatic machine designed to fill most any type of dry, relatively flowing product into any type container.

With a high degree of accuracy, the table model Elec-Tri-Pak automatically weighs and fills up to 20 packages a minute. Although designed for the lower price range, it has many identical features of the higher-priced, fully-automatic Elec-Tri-Pak. These features include Vibratory Feed Tray, Controlled Beam Weigh

TALK ABOUT

MAXIMUM PRODUCTION



Super Kiefer SYNCHRONIZED LINE

Study the picture! It shows equipment combining extreme beauty with unusual performance.

The many extravagant words of approval from users, are music to our ears.

- High speed
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- Noise reduction up to 75%
- Greatly lowered employee-fatigue

The bottles are automatically spaced as they first enter the "Bottoms-Up" Cleaner, then maintain their distance as they travel the entire line. A variable speed transmission drive, powers all machines as one unit:

"Bottoms-Up" Cleaner

Rotary Vacuum Filler

Capper and Chain Belt Conveyor

working together with military precision —

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Completely automatic, semi-automatic, hand-fed equipment to clean, fill, close, convey jars, bottles, tins, collapsible tubes.

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Scale, Single Compartment Weigh Bucket, Speed Control, and Acrometer Weight Adjustment. Units are available to handle a weight range from two ounces to five pounds. The machine is extremely simple to operate and can be handled by anyone.

Complete information and a 30-Day Free Trial of the table model Elec-Tri-Pak weigher can be obtained by writing to the Triangle Package Machinery Company, 6633-55 W. Diversey Avenue, Chicago 35.

Patterson Vacuum Dryer

A new type of vacuum dryer—the Patterson "Conaform" Vacuum Dryer—has been developed by the Patterson Foundry and Machine Company, East Liverpool, Ohio, for manufacturers of pharmaceuticals. This unit accomplishes complete and fast heat transfer to the entire batch.

The Paterson "Conaform" is a rotating unit of double conical construction. Unlike orthodox vacuum shelf dryers its efficiency does not depend on flat shelves and trays for heat penetration through the material which cannot be moved or agitated.

Design allows the surface layers of materials to constantly fall downward toward the cone as the unit rotates. This results in a free-falling, over riding, cascading of material, without breaking or deforming crystals, etc. Since no portion of the dryer is perpendicular to the axis, the cascade pattern changes constantly so no groups of particles take parallel paths. The particles constantly are deflected from the cone walls to the center of the batch.

New Ampoule Rinser

An entirely new Ampoule Rinser of advanced design and highest quality construction is now going into production by the U. S. Bottler's Machinery Co., 4015 N. Rockwell St., Chicago 18, Ill.

The new unit is built entirely of stainless steel including the frame and chassis. The bases of the rinser spouts are made of Teflon. Valves of stainless steel have Teflon valve seats that never require lubrication which not only saves servicing but provides absolute protection against any foreign matter being introduced into the ampoules.

The machine has six manifolds, each manifold advances one-sixth of a revolution, bringing another manifold to unloading and re-loading position. The rotary movement is advanced by the operator's touch of the foot switch.

Every essential progressive cleaning action has been engineered on the principle of thermal shock cleaning method thereby eliminating the use of a detergent and consequent removal of the detergent afterward.

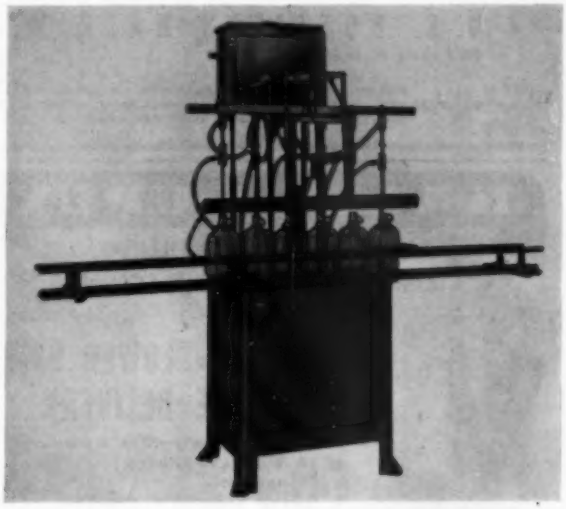
After decades of ampoule rinsing machine construction, U. S. engineers have cased rinsing operations in leading laboratories to master every operational and machine servicing requirement to perfect the "ideal machine" not to a price but to the utmost in efficiency over an extended period of machine life.

MRM's New Bottom-UP Filler

The MRM Company, Inc., 191-3 Berry St., Brooklyn 11, N. Y., has designed a new filling machine primarily for use with liquids of an extremely sensitive or foamy nature, which cannot normally be handled by standard available equipment such as vacuum, gravity or pressure. The MRM machine fills the container from the bottom up.

The unit is flexible, adjustable to containers varying in size from eight ounces to five gallons. All possibility of foaming is eliminated and it is ideal for liquids which should not be agitated.

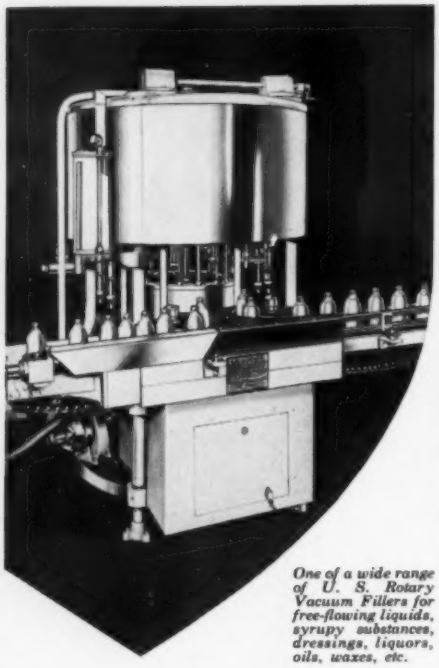
Operation is simple, the containers being placed and centered under the spouts either manually or automatically, depending upon the type of machine. The spouts enter the containers and upon reaching the bottom a spring valve is released thereby permitting the containers to be filled from the bottom upwards. When the fill is completed the spouts withdraw from the container automatically and all liquid which adheres to the sides of the tubes is trapped in a specially arranged drip pan which automatically places itself under the filling stems. This drip pan prevents the



liquid from dripping on the containers when the spouts are withdrawn, thus assuring a perfectly clean and positive fill. Production capacities with six filling spouts are as follows:

5 gallons	5-7 per minute
Gallon	8-12 per minute
½ Gallon	Up to 18 per minute
Quart	24 per minute

Other sizes will fill at proportionate speeds. The unit can be supplied either in a manual or fully automatic conveyor feed arrangement. The semi-automatic unit can be supplied with a greater number of spouts for higher production needs. It can also be manufactured in a fully automatic Rotary unit using the exact same principle for greater production.



One of a wide range of U. S. Rotary Vacuum Fillers for free-flowing liquids, syrupy substances, dressings, liquors, oils, waxes, etc.

Leave Your Liquid Filling Problem to a Specialist . . .

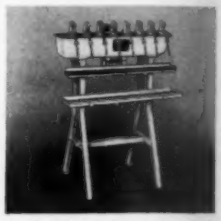
Your production line requirements may be a problem to you but they are a-b-c to our staff of liquid filling specialists.

With a wide range of basic machine models, U. S. engineers custom-build each automatic filler to the specific needs of the user. Result, your plant is custom-equipped by specialists . . . at a cost competitive with standard equipment. Many years of day-in and day-out filling efficiency thereafter, justifies U. S. specialized engineering.

For quotations, state nature of product, containers used and production line capacity. "Rotary Filler Bulletin" describing basic mechanisms mailed upon request.

U. S. Model B-49, Straightline Vacuum Filler. Adjustable for all types of containers.

U. S. Model B-2 Semi-Automatic Vacuum Filler. Fast, portable. Filling is continuous.



U. S. Siphon Filler, Improved model. Stainless steel tubes, glass lined tank. Dependable.

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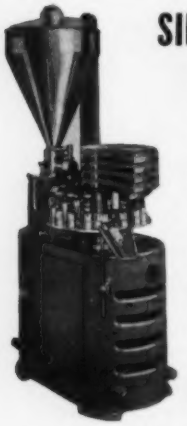
AUTOMATIC TUBE FILLING, CLOSING & CRIMPING MACHINE



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- ★ Accurate Fill—No drip—No smearing—No air.
- ★ Handles all metal tubes ⅜" to 1½" diameter.
- ★ Two-fold—Three-fold or Quadruple fold.
- ★ No tube—no fill. Coding Jaws—Automatic Ejector.
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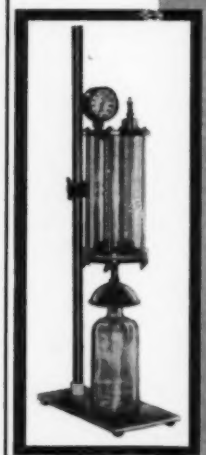

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2800 cc

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Cloth, paper, asbestos pads or any other filter media may be used. Has special outlet assembly for sterile bottling for bacteriological work.

Also available in smaller sizes.

Write for catalog, a helpful answer to filtration problems.

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F. R. HORMANN & CO., INC., 17 Stone Street, Newark 4, N. J.

"The NEW Installations are COLTON"

Quality has made these brands famous around the world and economical production has brought them within the reach of every household.

Today, and every day, millions of these tablets are produced on Colton No. 241 Double Rotary Tablet Presses.

Turning out more than a million and a quarter tablets every working day, the No. 241 continues to set the pace for high-speed production of well-made tablets.

If your tablet-making project calls for highest manufacturing quality plus highest production speeds, see the Colton No. 241 Double Rotary Tablet Press. Its performance has no equal.

ARTHUR COLTON COMPANY

DIVISION SNYDER TOOL & ENGINEERING COMPANY
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Compatibility is not a problem when you specify GIVAUDAN

Out of long experience in fragrance materials and in adapting them to a wide variety of products of varied uses and methods of application, Givaudan has successfully solved many problems regarding the compatibility of the essential ingredients.

Should you experience a difficulty stemming from incompatibility of materials, we may be able to offer a ready solution. Our staff of chemists and perfumers will welcome the opportunity of working with you in finding the best answer to this sometimes troublesome problem. Your inquiry will receive our prompt, considered attention.

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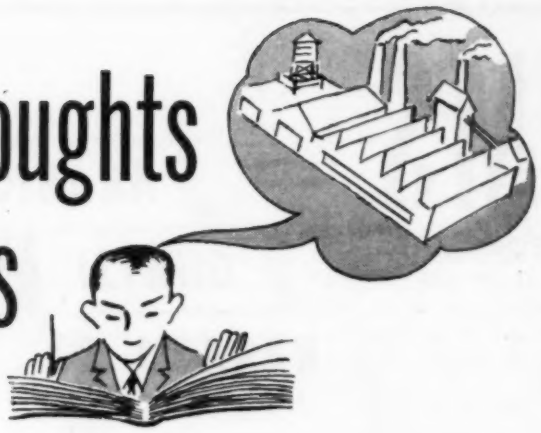
Patent Thoughts and Trends



*by Thomas Cifelli, Jr.**

PATENT ATTORNEY

THERAPEUTIC SALTS OF VANILLIC ACID ESTERS

The flavor chemist and the drug chemist probably look upon one another as very distant cousins. Yet, the line between the two is often hard to discern. For example, when one thinks of vanillin and its compounds the flavor properites come to mind immediately. Yet a recent patent (U.S. 2,675,404) shows that certain derivatives of vanillin are in the therapeutic domain.

In connection with this patent, I. A. Pearl of The Institute of Paper Chemistry, Appleton, Wisconsin, discloses that alkali metal salts of lower alkyl vanillates are effective against histoplasma capsulatum and coccidioides immitis.

It seems that while it was known that the lower alkyl vanillates were effective they were not water soluble and, hence, had to be administered in the form of a 40 per cent solution in olive oil, which was given orally. Such large amounts had to be administered that there was a relatively small margin of safety between the therapeutically effective doses and the doses which were toxic.

Pearl broadened this margin by using the alkali metal salts, mainly the sodium, potassium, lithium and ammonium salts.

Apparently the preferred compound is the ammonium salt of iso-butyl vanillate, which can be prepared as follows:

A solution comprising 340 grams of iso-butyl vanillate and 1500 cc. of absolute ether was prepared. The solution was prepared in a flask and dry ammonia gas was bubbled into the flask until it became almost solid with a white granular precipitate. The precipitate was filtered and thoroughly washed with cold (15° C.) anhydrous ether and then air dried. In this manner, 89 grams of the ammonium salt of iso-butyl vanillate was prepared, the salt having a slight ammoniacal odor and being soluble in water. The aqueous solution had a pH of about 9.

It was found that the filtrate could again be treated with ammonia gas to give additional amounts of the white granular precipitate of ammonium salt of iso-butyl vanillate. This additional precipitate was filtered and the filtrate again treated with the ammonia gas. Finally, 364 grams of pure ammonium salt of iso-butyl vanillate was obtained.

The ammonium salt is somewhat more satisfactory for use in the treatment of human beings because of its lower pH and, consequently, lower alkalinity.

2,2′,3,3′,4,4′,6,6′-Octahydroxy-5,5′-Dicarboxy Diphenylmethane

A recent patent (U.S. 2,675,406) is added evidence of the versatility of the hydroxy diphenylmethanes.

Some members of this family are of interest to the resin people, being intermediates in certain Bakelite resins of the alkali-catalyzed phenol-formaldehyde variety. Others when halogenated are found to possess very interesting bactericidal properties. Hexachlorophene is perhaps the outstanding member of this latter group. Now along come two Swedish inventors and they find that the compound given in the title acts as an inhibitor of the action of hyaluronidase, being some 30 times stronger in this respect than prior inhibitors. This very high inhibitory activity, according to the inventors, makes it possible to use the compound in the treatment of rheumatoid arthritis on the one hand and infectious diseases induced by hyaluronidase - producing bacteria on the other hand.

This question of the effect of hyaluronidase is very important, according to the inventors. They point out that the hyaluronidase of certain bacteria is of great importance for various reasons. Some of the pathogenic bacteria containing hyaluronidase, such as streptococci, are connected with certain types of rheumatic diseases. Since the viscosity of the synovial fluid depends mainly on its content of hyaluronic acid and since the cartilage of the joints contains chondroitin sulfuric acid it was assumed that at least some forms of rheumatic and other joint diseases are caused directly or indirectly by hyaluronidase.

The effect of the hyaluronidase upon connective tissues results therein that bacteria containing or producing this enzyme will penetrate through the organism much easier than other bacteria so that the risk of infection is highly increased. The hyaluronidase-bearing bacteria need not necessarily be pathogenic themselves, or they may be pathogenic only to a small degree—nevertheless they may mean a great danger to the organism by facilitating the pentration of other non-physiological substances, such as other bacteria, virus etc., into tissues and organs. This is of particular importance since many

*Newark, New Jersey

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highly pathogenic virus show a rather low penetration capability. If the organism is infected by hyaluronidase-producing bacteria infection with the said agents may result.

Liquid Cream Shampoos

A Colgate inventor, Hyman Henkin, recently obtained a patent, U.S. 2,674,580, on a flowable, creamy, opaque-like shampoo. The idea underlying the patent is to prepare shampoos having the desirable features of both the liquid and paste types, without the undesirable properties of either.

A disadvantage of the cream-type shampoos is that they are manufactured in the form of a paste and by reason of their high consistency have to be sold in collapsible tubes or jars. Regarding the liquid cream shampoos, a primary consideration is the general instability of these temperatures around 100° F., phase separation and translucency resulting.

Henkin's shampoos consist essentially of anionic sulfonated and sulfated detersive salts, anaqueous medium, and a minor amount of behenic acid. He asserts that his shampoos have high foaming power, excellent cleansing properties when applied to human hair in soft and hard water, and are milky, pearly, or creamy in consistency or body.

The behenic acid is preferably used in partially neutralized form, that is in the form of a mixture with amine soaps thereof. The preferred pH of the shampoo is from five to 7.5.

Apparently, behenic acid is the key to the patented composition as it is said to perform a number of functions. For one thing, it acts as an opacifier to keep the liquid shampoo opaque and creamy at temperatures of the order of up to about 110° F., with proper fluidity. It also assists in the stabilization of liquid emulsions, and acts as a hair conditioner to leave the hair lustrous and manageable. The amount of behenic acid recommended is up to about 10 per cent by weight of the final composition.

Behenic acid or docosinoic acid has the formula $CH_3(CH_2)_{20}COOH$ and is a constituent of ben oil and the roots of *Centaurea* behen.

The following examples are taken from the patent:

Example I

The following composition is a white opaque liquid cream shampoo.

	Per cent
Detergent salt[1]	25.0
Behenic acid	3.5
Lanolin	0.5
Triethanolamine	1.2
Methyl p-hydroxy benzoate	0.15
Perfume oil	0.4
Water	69.25

The detergent salt in the form of dry chips, the preservative and water are heated to 180° F.; and the lanolin and behenic acid are melted at a temperature of about 200° F., and added to the detergent solution. The ingredients are mixed to form a homogeneous mixture and the triethanolamine is added reacting partially with the behenic acid in situ. The perfume is added at 115° F. and the batch is cooled with continuous stirring at 80 to 90° F. The resulting liquid cream shampoo has a pH of about 6.5.

This formulation having an acidic pH, and a mixture of free behenic acid and triethanolamine soap thereof, is subjected to oven storage at 110° F. Under such conditions, the composition maintained its creaminess with no separation for over one month.

A similar formulation substituting stearic acid for the behenic acid turns translucent at 100° F. overnight and separates within several days.

Example II

The following is another satisfactory opaque liquid shampoo.

	Per cent
Detergent salt[2]	20.00
Behenic acid	3.00
Triethanolamine	3.00
Citric acid	0.70
Methyl p-hydroxy benzoate	0.15
Perfume	0.4
Water	Balance

Example III

A further satisfactory liquid cream shampoo may be prepared from the following formulation:

	Per Cent
Detergent salt[3]	15.0
Behenic acid	3.5
Water	Balance

Example IV

	Per cent
Detergent salt[4]	25.0
Behenic acid	3.0
Triethanolamine	1.0
Water	Balance

Example V

	Per cent
Detergent salt[5]	20.0
Behenic acid	2.0
Triethanolamine	0.7
Water	Balance

Trade-Mark Rulings

JOY EUSE NUIT was held not confusingly similar to LA JOIE DE JEAN PATOU, JOY DE JEAN PATOU or JOY, the marks being used on perfumes, toilet waters, etc. Jean Patou v. Societe Anonyme Societe Technique de Parfumerie F. Millot. Patent Office Examiner in Chief, 100 U.S.P.Q. 444.

LENASORB for analgesic and narcotic for intra-muscular use for relief of pre- and post-operative pain and ESORB for medicinal vitamin E preparation are not confusingly similar. Wyeth v. Injectables Research Corp. Patent Office Examiner in Chief, 100 U.S.P.Q. 445.

"LITTLE LADY" for handbags for children and girls is not confusingly similar to same mark used on soap, toilet water and cosmetics. Helene Pessl, Inc. v. Pyramid Leather Goods Co. Patent Office Commissioner, 101 U.S.P.Q. 83.

In view of fact that "cholan" standing alone is unlikely to have trade-mark significance, and of fact that products may be dispensed only by or on prescription of physician, physicians are not likely to be confused between "Neocholan" used for pharmaceutical preparations and "Cholan D.H," "Cholan, HMB," or "Cholonor" used on dehydrocholic acid with phenobarbital. Maltbie Labs. v. Allied Labs. Patent Office Commissioner, 101 U.S.P.Q. 86.

RECENT PATENTS

***2,673,186*—Procter & Gamble—Alkaline Detergent Composition Containing a Coumarin Derivative.**

(Continued on page 734)

[1]Sodium salt of sulfated monoglyceride of hydrogenated coconut oil fatty acids. It contained about 10 per cent by weight of inorganic sulfate formed in its manufacture.

[2]Sodium salt of sulfated monoglyceride of hydrogenated coconut oil fatty acids. It contained about 10 per cent by weight of inorganic sulfate formed in its manufacture. The composition has a pH of about 6.5.

[3]Sodium lauryl sulfate. The composition is adjusted to a pH of about 7.5 by addition of sodium hydroxide.

[4]Triethanolamine lauryl sulfate. The composition has a pH of about seven.

[5]Ammonium salt of sulfated monoglyceride of hydrogenated coconut oil fatty acids. It contained about 10 per cent inorganic salts. The composition has a pH of about 6.5.

Animal Health

Stability of Penicillin Products for Mastitis

It is pointed out by F. H. Buckwalter and E. A. Walsh (*Antibiot. & Chemother.* 3:1117, 1953) that products containing penicillin for the treatment of bovine mastitis by udder instillation have been commercially available for several years. The original products contained only penicillin. These were followed by a combination of penicillin and dihydrostreptomycin with or without various sulfa drugs. At the present time, there are numerous antibiotic preparations with or without sulfa drugs commercially available for the treatment of bovine mastitis. Extensive stability tests have been conducted with this type of product made by Bristol Laboratories Inc. The data include three types of products: (1) procaine penicillin G alone, (2) procaine penicillin G and dihydrostreptomycin, and (3) Quadricillin-DS which is composed of procaine penicillin G, dihydrostreptomycin, sulfathiazole, and sulfamerazine. In all three products, the vehicle is peanut oil gelled with three per cent aluminum monostearate. In view of the widespread use of this type of product. Buckwalter and Walsh felt it desirable to report their results on the stability of these products at normal and accelerated temperatures for long periods of time.

Data which they have accumulated to date show the stability of various penicillin products, used in the treatment of bovine mastitis, at 34-40 C. for four to 24 months and at 22-28° C. for two to three years. At 34-40° C. the average loss for penicillin is five per cent after four months, 8.1 per cent after 12 months, and 12.8 per cent after 24 months; for dihydrostreptomycin the average loss is 2.1 per cent after four months, 4.9 per cent after 12 months, and 6.7 per cent after 24 months. At 22-23° C. the average loss for penicillin is 1.1 per cent after two years and 3.1 per cent after three years; for dihydrostreptomycin the average loss is 1.4 per cent after two years and 2.3 per cent after three years. It would appear that these products can be stored for long periods of time, even at accelerated temperatures, without any serious decomposition of the penicillin and dihydrostreptomycin.

Detergents and Antibiotics in Hen Rations

The effect of detergents and high levels of antibiotics in the ration of breeding hens was reported by H. Yacowitz, V. D. Chamberlain, A. R. Winter and E. N. Moore to the Division of Agriculture and Food Chemistry during the 125th meeting of the American Chemical Society. In their studies, 600 Single Comb White Leghorn hens were equally distributed into 12 uniform groups. The hens were fed a 17 per cent protein mash ration adequate in all known nutrients and supplemented with the following materials: 30 Gms. of crystalline procaine penicillin G per ton; 100 Gms. of crystalline aureomycin HCl per ton; 25 Gms. of Arquad HT-16 per ton (a trimethyl alkyl ammonium chloride); 50 Gms. of Arquad HT-16 per ton; 500 Gms. of Ethomid HT-15/16 per ton (an ethylene oxide condensation product with alkyl amides). Duplicate groups were used for each treatment and two groups served as controls.

Data collected during the seven-month experimental period showed that the detergents reduced egg production while the antibiotics had no appreciable effect on egg production. Aureomycin reduced mortality from 24 per cent to 11 per cent and also produced a small increase in body weight. The other supplements had little or no effect on mortality or body weight. Negative results were obtained in studies of egg weight, specific gravity, shell strength, candling grade, and albumen score.

In progeny growth tests the feeding of 100 Gm. of aureomycin to hens resulted in improved growth of the chicks. The chicks were fed a complete ration containing an antibiotic. These results may be explained by the carry-over of an unknown nutrient or nutrients in eggs from hens fed the high level of aureomycin.

Aureomycin vs. Chronic Respiratory Disease in Broilers

In a paper presented at the 42nd annual meeting of the Poultry Science Association (through *Poultry Sci.* 32: 928, 1953), R. White-Stevens and H. G. Zeibel reported the effect of Aureomycin on the growth efficiency of broilers in the presence of Chronic Respiratory Disease (C.R.D.). Four field experiments involving flocks of broilers of 7,500 to 20,000 birds were conducted on the Delmarva Peninsula and North Georgia, in areas where C.R.D. was known to be endemic. In two experiments viable yolk sac cultures of C.R.D. isolates were applied intraocularly at 14 days of age. In the other two experiments, natural outbreaks of C.R.D. occurred.

Aureomycin, as an antibiotic feed supplement was added to the feed, both prophylactically and therapeutically; and in certain groups Aureomycin was also added to the drinking water. This procedure was found to be effective in maintaining appetite, efficiency of feed utilization and growth at levels significantly superior to those shown by the unmedicated controls. In two experiments the antibiotic therapy was accompanied by significant reductions in mortality. The effective concentrations of Aureomycin varied from 50 to 400 Gm. per ton of diet fed depending upon time of application and severity of the disease syndrome.

Powder for Granular Vaginitis

A powder consisting of a mixture of one per cent of silver picrate in kaolin is used by F. W. Brown (*Vet. Med.* 49: 66, 1954) for the treatment of granular vaginitis in cows. Application is by use of an insufflator. Treatment is repeated at five- to seven-day intervals for two or three treatments. Occasionally, slight discomfort of the patient is noted following administration and some exfoliation of the mucous membrane may be expected. Breeding rest of from 60 to 90 days is recommended.

Hexylresorcinol as an Anthelmintic

Two reports in the veterinary literature point to the value of hexylresorcinol as an anthelmintic for dogs. In one of these, D. E. Cooperrider and F. A. Hayes (*J. Am. Vet. Med. Assoc.* 124:191, 1954) state that hexylresorcinol was chosen from a group of phenols and resorcinols, all of which act on ascarids, because of its well-known lack of toxicity. Careful histological studies, made of the various organs of the body after single large doses of hexylresorcinol and even after repeated administrations over long periods, failed to show any pathological lesions. Most of the anthelmintics are given with a constant fear of absorption and subsequent intoxication. Hexylresorcinol differs from these by being relatively nontoxic even after absorption.

The results of studies on 25 dogs indicate that hexylresorcinol will remove 84.2 per cent of the Ancylostoma spp. and 98.1 per cent of the ascarids found in dogs, but it demonstrated no activity against *Trichuris vulpis* in this study. No signs of toxicity were detected.

In the second report, J. W. Newberne and W. S. Bailey (*Vet. Med.* 49:117, 1954) present a preliminary study of the effectiveness of hexylresorcinol suspension administered per rectum in the removal of hookworms, roundworms, and whipworms from dogs. A practical procedure for administering the anthelmintic is described. Variable, but generally effective, results were obtained in the removal of hookworms and roundworms using dilutions of 0.2, 0.4 and 0.5 per cent hexylresorcinol. The drug was appreciably less effective in the removal of whipworms. An apparent low toxicity and a lack of significant damage to the intestinal mucosa were observed. Further studies regarding practical application are indicated.

Nitrofurazone Prophylaxis for Pig Enteritis

It was the aim of the field experiment conducted by N. Lannek and S. Brag (*Vet. Med.* 49:75, 1954) to ascertain whether nitrofurazone is useful in prophylaxis of *Salmonella choleraesuis* enteritis in swine. The experiment was performed in an infected herd. Daily doses of 0.1 Gm. to 0.5 Gm. of nitrofurazone per animal given over a period of two or three weeks, resulted in complete protection. None of the 40 treated animals, but 16 (40 per cent) of the 40 nontreated control animals, fell ill with symptoms of Salmonella enteritis. Considering the low toxicity of nitrofurazone, Lannek and Brag believe that it is quite improbable that the low prophylactic level used successfully in their experiment (0.1 Gm. per animal daily for two weeks with one week without treatment) will produce any significant deleterious effects. Nitrofurazone may decrease the appetite and thereby reduce the food intake and retard the growth rate. This was not observed when the pigs had spent two weeks in the infected herd before the treatment was started. It is suggested that the pigs may then tolerate the nitrofurazone taste because they have been eating the strongly flavored garbage for some time.

Antibiotics for Chronic Bloat

In a preliminary report, W. H. Chivers (*N. Amer. Vet.* 35:186, 1954) calls attention to earlier observations that Aureomycin given for acute infections in cattle was also effective in some cases of concurrent chronic bloat. This led to the setting up of a project for the study of the treatment of chronic bloat in young cattle with antibiotics. Treatment consisted only of the intravenous injection of Aureomycin and Terramycin, except for the occasional use of a stomach tube to let out gas. Dosage was from two to 5 mg. per pound of estimated weight for Aureomycin and 1 mg. per pound for Terramycin. Treatment was given once a day for one to four days and the cases were kept under observation for about a week. Thirty-five animals have been treated and discharged long enough to get a minimum 30-day follow-up report. Twenty-one of these cases were treated with Aureomycin. Of these, 17 were apparently cured, three showed from 50 to 75 per cent benefit, while only one failed to respond. Of 14 cases treated with Terramycin, 12 were apparently completely cured, one showed 50 per cent benefit and one did not benefit. Relief in all cases benefited was spontaneous in 24 to 72 hours. The age range was three to 14 months. The cattle were nearly all of the beef type. Most owners report marked improvement in growth and condition. Later follow-up reports of a year or more correspond closely to the initial results and the 30-day reports.

Steroid Hormones for Heat Exhaustion in Dogs

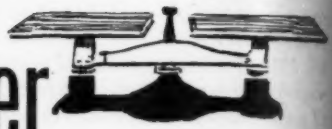
M. G. Rhoades (*J. Am. Vet. Med. Assoc.*) states that he has treated many cases of heat exhaustion in dogs with the steroid hormones. The symptoms were rapid breathing, salivation, and hyperpyrexia (106° to 107° F.). Many were in a semicomatose state. Within two to four hours after the administration, intramuscularly, of 100 mg. of cortisone or 40 units of ACTH in gelatin, breathing became normal, salivation ceased, and the temperature returned to normal. The evidence indicates that in this syndrome of heat exhaustion, there is a depletion of the adrenocortical hormones due to an exhaustion of the adrenal glands; thus there is a severe disturbance of the heat-regulating mechanism.

Neomycin in Veterinary Surgery

Neomycin sulfate has been used extensively by E. K. Bicek (*J. Am. Vet. Med. Assoc.* 124:105, 1954) as an adjunct in veterinary surgical procedures and has been found to be exceptionally effective in controlling those infections which so often complicate surgery conducted in the field. It is his opinion that this antibiotic is more effective, in this use, than other products used in the past and has materially decreased mortalities.

For example, neomycin powder has been used alone in the treatment of extramammary abscesses of the bovine udder, and after five daily applications further medication was unnecessary. Bicek has used a neomycin ointment in routine bovine mastitis but has not found it as beneficial as the powder in surgery. The powder was used in "pink-eye" of cattle with good results. It was considered superior to the other preparations used for this purpose. Lacerations of the skin have also been treated successfully. Neomycin seems to be exceptionally effective in treating calf scours and baby pig enteritis. In these cases, Kaopectate with neomycin was used with the best results ever attained.

Compounder's Corner



Hydrogenated Lanolin

It is reported in the *Manufacturing Chemist* (24:522, 1953) that an improved lanolin has been produced by hydrogenation. The new product is described as white, odorless and non-viscous. Its acidity is lower than that of ordinary lanolin, and it also has a lower iodine index. It is very easily mixed with water.

It is stated that experiments by E. Trabucchi and G. Agloni indicate that hydrogenated lanolin is superior to ordinary grades as a vehicle for pharmaceuticals for cutaneous absorption. In the chemical experiments made by the Italian workers, it was determined that the acidity of normal lanolin is one-third higher than that of hydrogenated lanolin. It was also shown that hydrogenated lanolin was able to absorb three to four times its own weight of water—much more than ordinary lanolin. This is of great importance when making emulsions.

In tests on human volunteers, the time and intensity of the appearance of a rash after the cutaneous application of methylnicotinate was ascertained. The time was shorter in the individual whose penetration vehicle was hydrogenated lanolin, compared to the ones upon whom normal lanolin was used. The intensity of reaction, however, was the same in each case.

The compatibility of hydrogenated lanolin with skin was demonstrated by applying 1 Gm. per day for seven days on the shaven skin of two rabbits. There was no damage to the skin nor any general disturbance.

According to A. Fayaud (*Soap, Perf. & Cosmetics* 26:1247, 1953) the method of hydrogenation is the same as the one employed for the hydrogenation of oils and fats. The mass, thoroughly mixed with the catalyst and introduced in the autoclave, is heated at about 330°. The hydrogen of the initial pressure of 180 atmospheres passes gradually to 250 and 350 atmospheres. The absorption of hydrogen is rapid, and in 20 to 25 minutes the operation is ended. The hydrogenation mass is passed to a filter press, where it is freed from catalyst. Having then been washed and dried, the finished product is of an oily white appearance with an agreeable feel when handled.

New Washable Ointment Base

In view of various objections to the usual greasy or washable ointment bases, R. E. Saute and C. O. Lee (*J. A. Ph. A.*, Pract. Ed. 15:39, 1954) set out to develop an ointment base formula which is compatible with most of the medicaments that a dermatologist might prescribe and one that can be made extemporaneously by pharmacists. Several bases were formulated and observed for a period of 30 days. The base which appeared to be the most suitable at the end of this time has the following formula:

Amerchol CAB*	**20.0**
Glyceryl monostearate	**10.0**
Cetyl alcohol	**20.0**
Spermaceti	**10.0**
Span 20**	**10.0**
Tween 20**	**10.0**
Glycerine	**12.5**
Distilled water	**100.0**
Preservatives	**sufficient**

(*American Cholesterol Products, Inc., Milltown, N. J.)
(**Atlas Powder Co., Wilmington, Del.)

Fuse the Amerchol, glyceryl monostearate, cetyl alcohol, spermaceti, and Span 20 together on a water bath at a temperature of about 60°; mix the glycerine and Tween 20 with the distilled water, containing the preservative and heat to a temperature of 60°. Pour the water phase into the wax phase and stir until the mixture is congealed.

The pH of this base was found to be 5.75 which is close to that of the skin. To test the stability of the base when made alkaline, a sufficient amount of ammonium hydroxide solution was incorporated in it to produce a pH of 11.6. The mixture remained unchanged for a period of three months. In order to test the compatibility of the base, 20 different chemicals were incorporated to form ointments. Satisfactory preparations were obtained with each of the medicinals except tannic acid which was incompatible with the base. On being mixed with an equal amount of methy salicylate the base formed a good lotion which remained stable at room temperature for at least three months.

Gamma Radiation for Sterilizing Pharmaceuticals

It is observed by J. Controulis, C. A. Lawrence and L. E. Brownell (*J. A. Ph. A.*, Scient. Ed. 43:65, 1954) that pharmaceutical products used for parenteral therapy must be sterile. Sterilization with heat is usually convenient with products that are not heat-labile. Heat-labile products can usually be sterilized by microfiltration and by maintaining sterility during packaging of the product in sterile areas. However, a number of therapeutic substances resist the successful application of either of these techniques. Furthermore, sterilization of the finished package would assure the potential user of the utmost safety with regard to possible contamination of the parenteral product. In this respect, sterilization by ionizing radiation offers some interesting possibilities.

In the studies made by Controulis and his colleagues the sterilizing ability of gamma radiation was investigated by subjecting both uncontaminated and contaminated samples of a variety of pharmaceuticals in finished package form to the radiation from a one-kilocurie cobalt-60 source. They found that all of the contaminated samples were rendered sterile after 24 hours of irradiation. All of the pharmaceuticals except one, a pituitary substance extract, showed no significant deterioration from the irradiation. The ordinary glass containers used in packaging the pharmaceuticals suffered marked discoloration when subjected to irradiation levels necessary to achieve sterilization.

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U.S.I. CHEMICAL NEWS

May ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1954

Chemical Progress Week

Sponsored by the Manufacturing Chemists' Association, May 17-22 is the first annual Chemical Progress Week. Its purpose is to bring home to the American public the significance of the chemical industry in terms of the individual. U.S.I., as a member of the MCA, is happy to participate in this industry-wide effort.

Alkyd Resin Improves Outside House Paints

Outside house paints containing a new U.S.I. alkyd resin, Aroplaz 1400, should maintain a better looking appearance for a longer time. The result of over 7 years of research and practical testing, Aroplaz 1400 is a pure, low viscosity alkyd. It can be used in either white or tinted paints in place of all or part of the oil, such as linseed, ordinarily used.

Tests indicate that paints made with Aroplaz 1400 give cleaner, whiter surfaces after exposure and that the over-all durability is considerably improved.

Aroplaz 1400, experimentally known as resin DX-159, is now in commercial production and is supplied at 100% solids content. U.S.I. offers detailed information to paint manufacturers who wish to make independent investigations of this unique new resin.

Promising Sunscreen Is Introduced For Cosmetics

A new development in filters for ultraviolet light, particularly useful for sunscreen cosmetics, has been announced by U.S.I. The material, known as H-124S, is (butyl carbityl) (6-propyl piperonyl) ether. Safe for application to the skin, the new product is a practically odorless oil of extremely low volatility. It is chemically stable as well as stable to the action of ultraviolet light, and also shows excellent solubility characteristics.

H-124S stabilizes esters presently used in sunscreen compositions. The promising compound can be used by cosmetic manufacturers alone or, preferably, to supplement the absorption range of existing sunscreen materials. Of great importance is the fact that it does not screen out tanning rays. Further information on H-124S as a sunscreen can be obtained by writing to the editor of *U.S.I. Chemical News*.

New Plastic Windows Keep Themselves Clean

A new type of plastic window has been designed for industrial and public buildings. The windows are said to be self-cleaning, shatterproof and translucent. They are glazed on one side only and transmit diffused, glare-free light. Casement-type windows are available in various sizes to fit all standard casement frames, according to the manufacturer. The windows snap into place.

Interest Renewed in CPR Products As Truck and Garden Insecticide Due to No Build-Up of Immunity

Synergized Rotenone and Pyrethrins Regain Preferred Position

Increasing reports of build-up of acquired resistance or so-called "immunity" by insects against some insecticides has resulted in renewed interest in CPR dusts and sprays. CPR is a combination of piperonyl cyclonene, pyrethrins and rotenone, and the synergistic action of piperonyl cyclonene increases the effectiveness of the combination beyond the sum total of the three insecticides individually.

Because of its recognized effectiveness combined with low toxicity — all three ingredients being of a low order of toxicity — CPR has enjoyed a preferred position in control of many insects, particularly in the garden and truck crop field. In the sweeping upsurge of newer chlorinated hydrocarbons, many growers risked the greater toxic hazards to avail themselves of the residual killing power of these insecticides.

Rotenone in Short Supply

Reports of insects building an immunity to these insecticides have increased in each season. First it was flies, then mosquitoes and more recently other insects such as the cabbage caterpillar. The result has been a resurgence of rotenone, which had long been the basic insecticide of these growers. In the intervening time, however, supplies of rotenone have become critical and it became apparent that the extra effectiveness of synergized rotenone could serve as the best method for extending the supply and in-

MORE

Methionine Increases Growth Rate of Infants

Infants fed half-again as much DL-methionine as their diets normally would contain gained 20% more weight in a month's time, according to a recent report. These results further illustrate the strategic role methionine plays in the metabolism of fat, protein, sulfur and water.

The group of infants between the ages of three and four months was given supplemental methionine at the rate of 180 milligrams a day. Another group receiving the same basic diet, without methionine, was studied for purposes of comparison. The extra methionine produced no unfavorable reactions.

Table of Elements Revised

A new periodic table of the elements has been prepared with improvements in layout and arrangement. This is said to be particularly true with respect to the complicated placement of atomic weights and numbers in relation to the symbol of the element.

Application of CPR dust to beans with a tractor operated dusting machine. CPR products control insect infestation in such a manner that produce is free of hazardous toxic residues.

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May ★ **U.S.I. CHEMICAL NEWS** ★ 1954

CONTINUED

New Interest In CPR Products

creasing the results.

Not only are pyrethrins and rotenone helpful in "activating" each other, but both of them give a synergist action in combination with piperonyl cyclonene.

New CPR Products

Four new CPR spray products for use on garden and house plants are being introduced to the market for insecticide formulators in 1954, in addition to the dust base and spray concentrates previously available from U.S.I. With these products, formulators can obtain standardized combinations of ingredients for which all labeling and test data is complete.

The convenience of these combinations works two ways: in providing the formulators with supplies which meet known standards for each and all of the ingredients, and second in providing research-supported claims for the product he sells.

The commercial grower of beans, cabbage, cauliflower, broccoli, squash and cucumbers finds the CPR products can control insect infestation in such a manner that the produce will be free of hazardous toxic residues. And the home gardener wants an insecticide which will control a wide range of insects. There is increasing evidence that one of the advantages of the botanical insecticides such as CPR lies in the fact that they are not so destructive to natural parasites of insects.

This was recently reported on in *Pyrethrum Post* with reference to the work of Dr. C. P. Clausen of the University of California. According to the journal, "Clausen has concluded, after a review of different workers' observations, that botanical insecticides are superior to inorganic materials wherever repeated application is made. He believes that such materials as rotenone and pyrethrum kill only the adult parasites present on foliage, and nothing further. He points out that chemical and biological control measures may sometimes be incompatible, sometimes supplementary." These new developments are all contributing to the renewed interest and new products based on CPR.

Ultrasonics May Be of Use In Pharmaceutical Industry

The use of ultrasonics holds real potential for the pharmaceutical industry, according to a recent report. The most promising use of ultra-sound in the industry is thought to lie in its application to problems which have not been solved by other physical and chemical processes. One possibility is said to be in the production of emulsions and suspensions in materials previously refractory to such treatment. Another is in the production of vaccines, where experiments have shown that intact undenatured antigens can be extracted ultrasonically from the microorganisms responsible for tuberculosis and other diseases.

Alkylating Agent Helps In Synthesis of Organics

A new method for making many alkylated compounds has been developed. Described as promising for the preparation of lubricants, additives, plasticizers, therapeutic agents and surface-active agents, the method uses an alkylating agent which can be obtained from commercial vegetable oils.

The alkylating agent, according to researchers, is a long-chain alkyl group. It can be used to alter the molecular structure of such varied organic types as phenols, mercaptans, alcohols, amines, salts and benzene.

Gold Discs Burst At Low Pressures

Gold is now being used to manufacture low-pressure rupture discs. Gold discs reportedly have been found to burst consistently at low pressure, be immune to corrosion and yet be economical. They are said to be accurate to within 5% for bursting pressures above 50 psi and to within 2 psi for bursting pressures less than 50 psi.

Since the precious metal is reclaimable, the cost of the discs does not differ greatly from base metal discs.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

An insect repellent packaged in an Aerosol container is said to give positive protection against mosquitoes, black flies, chiggers and many others. It is described as virtually odorless after application and safe for clothing. **(No. 1040)**

A new line of laboratory glassware is described as smaller than regular glassware, but not in the micro range. **(No. 1041)**

Antibiotic bandages are now available without a prescription. Impregnated with a combination of three antibiotics, they have been approved for sale by the Food and Drug Administration. **(No. 1042)**

For tapping, deephole drilling, lathe machine cutting or hand reaming on any metal, a blend of chemicals is said to free the tool and permit continued rotation and pressure. According to the manufacturer, less tool breakage and cleaner threads, surface and holes are the result. **(No. 1043)**

Aluminum transport cans may replace stainless steel cans for storing and transporting chemicals, pharamaceuticals and food products. The lightweight cans are described as seamless and easy to clean and have an airtight seal. **(No. 1044)**

Gas and air leaks can be detected by a liquid which penetrates rust scales and cracks, forming bubbles where the leak occurs. The liquid is claimed to be nonflammable and nonexplosive. **(No. 1045)**

A nonionic detergent soluble to a degree in most oils has been developed. It will be manufactured in a commercial grade for the textile, general cleaning and oil additive trades, and according to the report, a refined product will be produced for the cosmetic industry. **(No. 1046)**

Erbium oxide is reported to be available at a minimum purity of 98%. Principal impurities are fractional percentages of dysprosium, holmium, thulium, ytterbium and yttrium oxides. **(No. 1047)**

Serological baths with a temperature control closer than 0.4° C. have been marketed. The base and walls are claimed to be free of heating elements, which have been placed beneath the stainless steel tank. **(No. 1048)**

Single crystal germanium is now in commercial production. The crystals are described as homogeneous in electrical as well as crystal properties, not only on a gross scale but also on a microscopic scale. **(No. 1049)**

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Butanol (Normal-Butyl Alcohol)
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Propanol (Normal-Propyl Alcohol)

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Completely Denatured—all regular and anhydrous formulas
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ACETONE—A.C.S.

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Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

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Arofene*—pure phenolics
Aroflat*—for special flat finishes
Araflint*—room temperature curing phenolic
Aroplas*—alkyds and allied materials
Aropol*—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

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CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid and Dust
Rotenone Products: Liquid and Dust

INSECTIFUGE MATERIALS
Indalone*
Triple-Mix Repellents

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Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

FEED PRODUCTS
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Choline Chloride
Curbay B-G* 80
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin B_{12} and Antibiotic Feed Supplements
Vacetone* 40

OTHER PRODUCTS
Acetaldehyde
Caustic Soda
Ethylene
IPC (Isopropyl-N-Phenyl Carbamate)
CIPC
Liquid Chlorine
Metallic Sodium
Methionine (Pharm.)
N-Acetyl DL-Methionine
Nitrocellulose Solns.
Propionaldehyde
Propionic Acid
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Thus, except for glass discoloration and the possible deterioration of a limited number of products such as pituitary substances, the sterilization of pharmaceuticals in finished package form, via gamma radiation, is considered to be a practical and valuable addition to the various sterilization methods used by the pharmaceutical industry.

Bismuth in Skin Preparations

In discussing the value of bismuth in the treatment of skin conditions, A. J. Ambrose (*Practitioner* 171:549, 1953) says that he has seen a large number of therapeutic preparations acclaimed and then fall into disfavor but, throughout, bismuth salts have maintained a high place in the armamentarium of the dermatologist because they promote healing, are soothing, astringent and antibacterial. Thus, for the treatment of acne, he suggests the following preparation which can be applied at night and washed off in the morning.

Bismuth subnitrate	**40 gr.**
Ichthammol	**40 gr.**
Ointment of ammoniated mercury	**40 gr.**
Paraffin ointment, to make	**1 oz.**

The following ointment is recommended for day use:

Resorcin	**40 gr.**
Precipitated sulphur	**40 gr.**
Bismuth carbonate	**40 gr.**
Starch powder	**120 gr.**
Hydrous ointment, to make	**1 oz.**

In addition, he states, the patient should avoid chocolates, cocoa and lard. The duration depends upon the severity of the case, the patient's faithful carrying out of instructions, and the avoidance of squeezing the comedones. Soap and water is beneficial in acne.

In the case of bedsores, two useful powders for dusting on sore points and broken skin include:

Bismuth subgallate	**120 gr.**
Powdered benzoin	**75 gr.**
Starch powder, to make	**1 oz.**

The second of these powders, which has a stimulating action, is made from:

Balsam of Peru	**60 mins.**
Compound tincture of benzoin	**60 mins.**
Bismuth carbonate	**36 gr.**
Hydrous wool fat	**54 gr.**
Cod-liver oil	**72 mins.**
Solution of calcium hydroxide	**72 mins.**
Castor oil	**126 mins.**

Dermatitis from any cause, provided it is in the subacute stage, may benefit from:

Bismuth carbonate	**60 gr.**
Kaolin	**60 gr.**
Starch powder	**60 gr.**
Olive oil	**60 mins.**
Ichthammol	**10 gr.**
Paraffin ointment to make	**1 oz.**

In discussing the treatment of hemorrhoids, Ambrose states that although the bismuth subgallate compound suppository (N.F.) is a useful preparation, he prefers the following ointment:

Bismuth carbonate	**60 gr.**
Tannic acid	**10 gr.**
Mercurous chloride	**48 gr.**
Ointment of phenol	
Ointment of lead subacetate	**equal parts to make 1 oz.**

This ointment is also useful in the treatment of granuloma annulare and herpes simplex; for the latter it is specific.

For protecting the skin against sunburn, Ambrose recommends:

Bismuth carbonate	**10 per cent**
Quinine hydrochloride	**5 " "**
Yellow soft paraffin, to make	**100 " "**

It is most important, he emphasises, that yellow soft paraffin should be used, not white.

In a bad case of sensitization to ultraviolet light and sunlight with intense irritation and a rash imitating seborrheic dermatitis, he finds the following effective:

Resorcin	**10 gr.**
Bismuth carbonate	**60 gr.**
Strong solution of lead acetate	**6 mins.**
Ichthammol	**10 gr.**
Glycerine	**15 mins.**
Water, to make	**1 fl. oz.**

In the opinion of Ambrose, nothing compares with bismuth to give a dazzling complexion. The following, says he, is a good face powder:

Bismuth subgallate (or bismuth carbonate)	**40 gr.**
Boracic acid powder	**40 gr.**
Kaolin powder	**40 gr.**
Starch powder	**360 gr.**

Perfume can be added and any desired color can be blended in.

The ladies, says Ambrose, will appreciate the following thin cream, which prevents and heals cracked lips and is kind to the face:

Bismuth carbonate	**45 gr.**
Hydrous wool fat	**60 gr.**
Rose water (triple distilled)	**60 mins.**
White soft paraffin	**300 gr.**

He has not found the small amounts of bismuth to cause darkening, or to have any other deleterious effect on the skin.

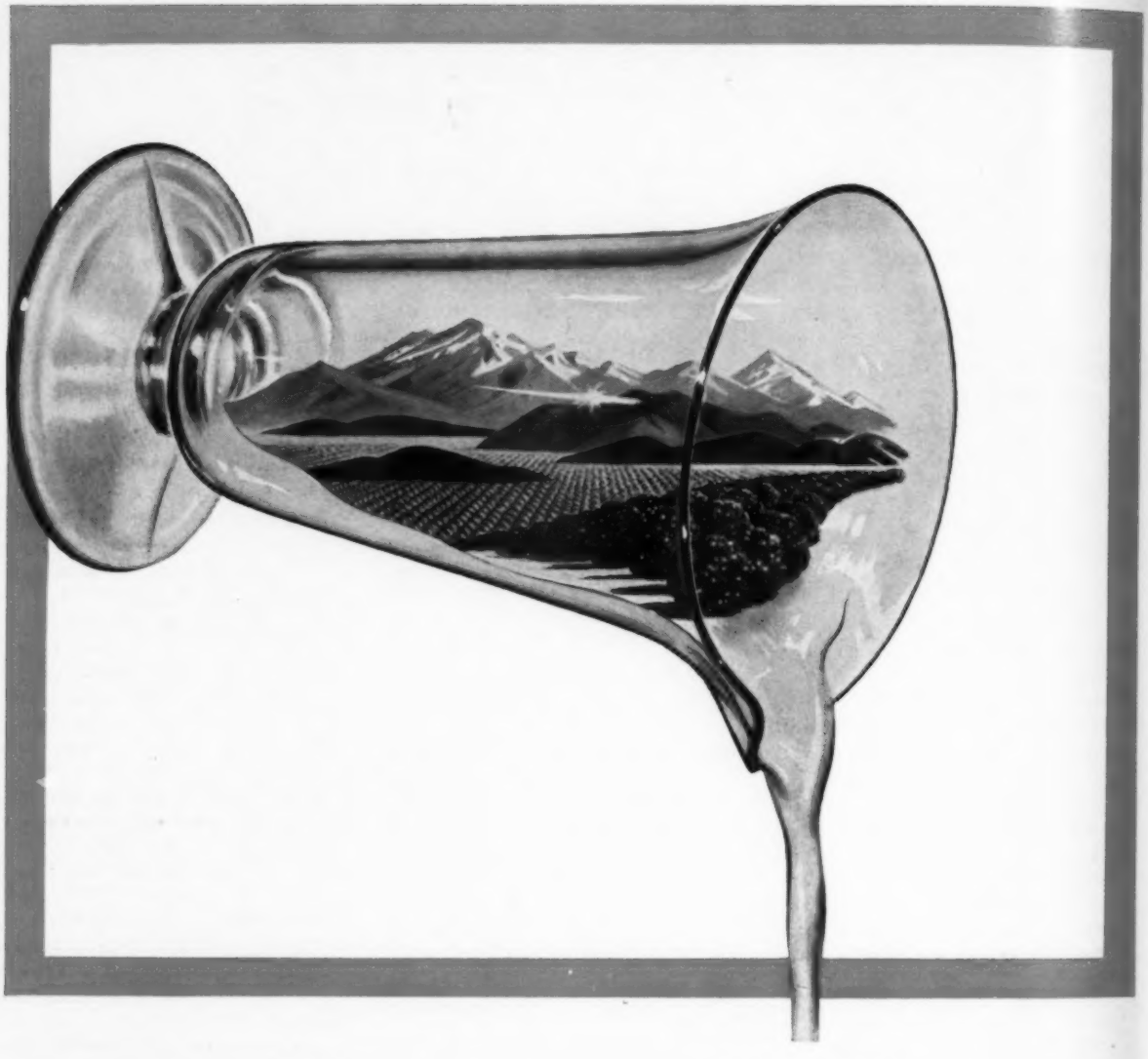
In commenting on reactions to bismuth, Ambrose observes that it can cause a rash, but this is rare, and he personally has never seen one. It can cause stomatitis, but this is not likely to occur with doses he has prescribed. In the rare case in which bismuth does cause a reaction, the treatment is to stop its administration and to give a course of injections of BAL.

Rectal Suppositories to Replace Enemas

Because of the shortage of nursing personnel, E. A. Banner (*Proc. Staff Meet. Mayo Clinic* 28:567, 1953) studied the possibility of using a suppository instead of enemas during the postpartum period. He found that a suppository, made as follows, when in contact with the rectum, develops a minimal amount of carbon dioxide, which, when liberated, stimulates the peristaltic and defecation reflexes.

Sodium bicarbonate	**0.60 Gm.**
Potassium bitartrate	**0.90 Gm.**
Calcium silicate	**0.05 Gm.**
Bentonite U.S.P. XIII	**0.30 Gm.**
Polyethylene glycol	**0.20 Gm.**
Dextran 282	**0.05 Gm.**
Cocoa butter	**0.05 Gm.**
Vegetable lecithin	**0.10 Gm.**
Talc, to make one suppository.	

No serious side effects have followed administration, although some patients experienced minor gas pains. Patients preferred suppositories to enemas and the use of a single suppository was successful in 60 to 65 per cent of all patients. If after 30 minutes evacuation was not accomplished, a second suppository was inserted, and this increased the overall efficiency by about five per cent. Banner believes that the rectal suppository acts as a satisfactory substitute for enemas during the postpartum state, thereby increasing the efficiency of nursing personnel, substantially decreasing the cost of overall operation and minimizing discomfort to the patient.



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Advancing Therapy

Vitamin B_{12} for Growth Failure

Data gathered from a School Nutrition Study and presented by N. C. Wetzel, H. H. Hopwood, M. E. Kuechle and R. M. Grueninger (*J. Clin. Nutrition* 1:17, 1953) show they support the conclusion that vitamin B_{12} exerts a "growth-promoting-effect" when given as a dietary supplement to children in growth failure. The general benefits derived from the present study of vitamin B_{12} dietary supplements were felt well beyond the point at which recovery responses developed in individual children. The most immediate reactions were noted by the personnel of the medical and nursing departments, but almost simultaneously by teachers in the classrooms who became aware that at least some of the pupils were improving in behavior, attitude, and scholastic work or that they were showing less strain and fatigue or, greater interest and attention, and hence better all-around progress than before. Expressions of similar import were offered by parents. The fact that the children were well disposed toward the program is attested to by the fine attendance record they made and by their willingness to participate faithfully in the extra routine of tests, measurements, and supplements.

Topical Use of Sodium

The value of sodium sulfacetamide in topical therapy is indicated in the report of N. W. Duemling (*Arch. Dermat. & Syph.* 69:75, 1954). The chemotherapeutic effectiveness of this drug was studied in the management of 100 patients, 76 with seborrheic dermatitis of varying extent and severity and 24 with other dermatoses, including primary bacterial cutaneous infections. This drug exhibits an in vitro antibacterial activity against a majority of the organisms most commonly found in cutaneous pyogenic infections. It is effective in low concentrations against both Gram-positive and Gram-negative organisms, and its spectrum compares favorably with that of a combination of bacitracin and neomycin against the organisms tested. This fact suggests its possible usefulness in substitution therapy in cases in which the organism is resistant to the antibiotic or the patient has become sensitized to the antibiotic.

The high solubility of sodium sulfacetamide at the physiologic pH of 7.4 is the basis for its high degree of penetration and absorption in comparison with other sulfonamides. Although it seems to be equally effective in an oil-in-water or a water-in-oil type emulsion base, there is some evidence that the former allows greater penetration in the inflamed or abraded skin. Repeated patch tests with the preparations used revealed no evidence of irritation or sensitization. However, during the course of the study four instances of irritation were encountered. Two patients reacted to a 30 per cent solution instilled into the eyes, one to the shampoo and one to the ointment.

Of the 76 cases of seborrheic dermatitis with varying degrees of severity of involvement, 46 were completely controlled in from two weeks to six months. Twelve patients used only a shampoo containing three per cent sodium sulfacetamide, while the remainder used a 10 per cent sodium sulfacetamide ointment for varying lengths of time, finally completing their treatment with the shampoo alone. Improvement was striking in cases complicated by secondary bacterial infection, oozing, and crusting. Of the 24 cases comprising other dermatoses, including primary bacterial cutaneous infections, complete control was achieved with the use of 10 per cent sodium sulfacetamide ointment in 17. The drug exerted no influence in one case each of alopecia areata, contact dermatitis, and neurodermatitis and in three cases of psoriasis. The effectiveness of the drug in all types of primary bacterial cutaneous infection was noteworthy.

Cortisone and ACTH in Non-Rheumatic Disorders

The effect of cortisone and ACTH in non-rheumatic diseases has been studied in 43 patients by G. M. Aber, G. N. Chandler and S. J. Hartfall (*Brit. Med. J.* 1:1, 1954). Fourteen patients with disorders of the blood have been observed. A favorable response occurred in three children with acute acquired hemolytic anemia, and in thrombocytopenic purpura apparent clinical benefit resulted in the two patients treated. No effects were produced in aplastic anemia, though one patient with acute agranulocytosis from thiouracil made a good response. The effect of ACTH in leukemia was at best temporary. This small experience suggests that, apart from acquired hemolytic anemia and some cases of purpura, cortisone and ACTH have little place in the treatment of blood disorders.

Sixteen patients with disorders of endocrine function have been studied. Of nine patients with exophthalmic ophthalmoplegia, only three responded well, the best results being obtained with ACTH in those examples of recent onset or rapid progression. Three patients with Simmonds' disease have made a dramatic and sustained improvement on ACTH. Two patients showing the virilizing effects of adrenal hyperplasia have been treated by adrenalectomy and cortisone. In neither did the results obtained appear to justify the risks involved. Seventeen-ketosteroid excretion was controlled in two pseudohermaphrodites by the use of cortisone.

The beneficial effect of cortisone and ACTH in asthma has been confirmed. The use of ACTH by intravenous drip and of cortisone by inhalation usually brought prompt improvement and was an important economy in prescribing. In two patients with nephrosis a con-

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siderable diuresis attended treatment, and in one of them the remission obtained has lasted more than a year. There is no evidence that ACTH influences portal hypertension accompanying cirrhosis, though apparent clinical benefit occurred in one patient.

Tetracycline Evaluation

Following clinical and laboratory observations on the new antibiotic, tetracycline, M. Finland, E. M. Purcell, S. S. Wright, B. D. Love, Jr., T. W. Mou and E. H. Kass (*J. A. M. A.* 154:561, 1954) concluded that the antibacterial activity of tetracycline closely resembles, and in most respects is almost identical with, that of oxytetracycline (Terramycin) and chlortetracycline (Aureomycin). There is essentially complete cross resistance among the three tetracycline analogues *in vitro*. Chlortetracycline is considerably less stable than either of the other two analogues when kept in solutions, particularly in an alkaline medium. Satisfactory blood levels are sustained during treatment with oral doses of 250 mg. or 500 mg. of tetracycline hydrochloride every six hours, and high concentrations are maintained in the urine during treatment with such doses. After single oral doses of 1 Gm., the concentrations of antbiotic obtained in the plasma appeared to be somewhat higher with tetracycline than with the other two analogues.

A clinical trial was carried out in 118 patients treated with tetracycline, most of them for infections of the urinary or respiratory tract. The clinical and bacteriological effects of such treatment appeared to be similar to those obtained in a recent study with oxytetracycline or chlortetracycline in similar cases. The major clinical difference between tetracycline and the other two analogues is the distinctly lower incidence of untoward gastrointestinal symptoms from tetracycline.

Drugs for Airsickness

In a report on their comparison of various drugs against airsickness, H. I. Chinn, L. J. Milch and A. J. Dugi (*J. Applied Physiol.* 6:257, 1953) cite previous reports on the superiority of scopolamine hydrobromide (1 mg.) over promethazine hydrochloride (Phenergan) in the prevention of this condition. Both compounds have also been reported of value in airsickness prophylaxis, although the scopolamine dosage employed in these cases was 0.65 mg. rather than 1 mg. In further testing these drugs with respect to airsickness, the long-acting antihistamine Postafene (*p*-chlorobenzhydryl *m*-methyl benzylpiperazine dihydrochloride) was included, because of preliminary reports indicating an extremely long protective period and a paucity of side-effects. It was found that 1 mg. of scopolamine affords greater protection against airsickness than 25 mg. of Postafene or 25 mg. of promethazine, both of which, however, significantly lower the incidence of airsickness. Postafene protects for at least 24 hours after oral administration. The side-effects produced by these drugs were slight, the most significant being an increased incidence of dry mouth after scopolamine.

Chemotherapy of Atypical Pneumonia

In their report on the chemotherapy of primary atypical pneumonia, G. Meiklejohn, N. C. Thalman, D. J. Waligora, C. H. Kemp and E. H. Lennett (*J. A. M. A.* 154-553, 1954) state that the proportion of patients with this condition whose temperature fell promptly following treatment with chlortetracycline (Aureomycin), chloramphenicol (Chloromycetin) or oxytetracycline (Terramycin) differed from that observed in a control group treated with penicillin. The difference was negligible in patients whose temperature did not exceed 102° F., because virtually all patients in the control group recovered promptly. In patients whose temperature was 103° F. or higher there was a decided difference in favor of chlortetracycline, chloramphenicol, and oxytetracycline over the control drug. The results provide further evidence that chlortetracycline is an effective drug in primary atypical pneumonia and suggest that chloramphenicol and oxytetracycline are at least equally effective.

Vitamin B_{12} for Trigeminal Neuralgia

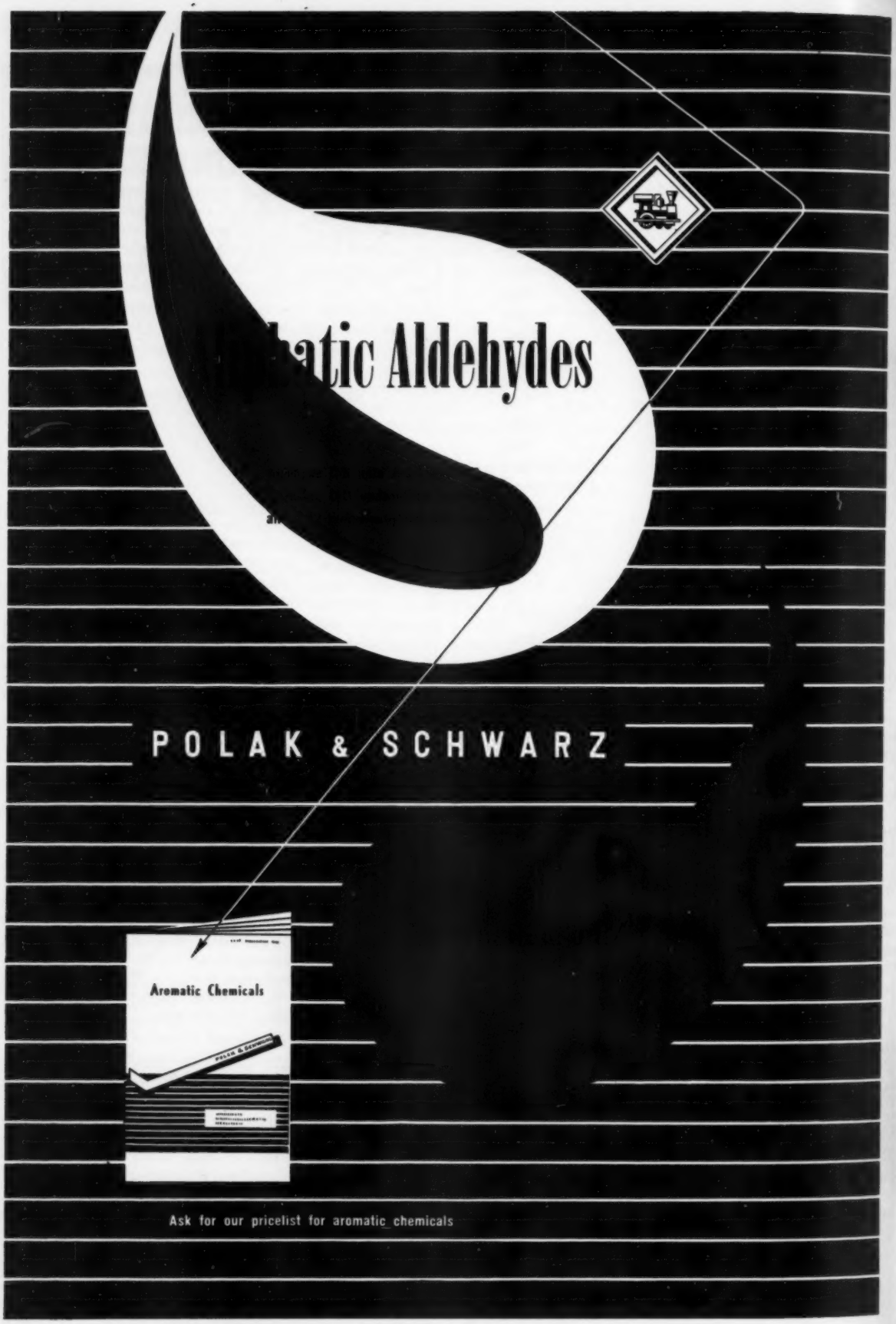
In eight of 17 patients with trigeminal neuralgia, satisfactory relief is reported by E. Alexander, Jr. and C. H. Davis (*N. Carolina Med. J.* 14:206, 1953) following treatment with 1000 micrograms of vitamin B_{12} per day, given intramuscularly in two equal doses morning and night for 10 days. Six of the eight patients had complete relief lasting for from two to eight months. No untoward reactions were encountered. Twelve of the 17 patients, including four of the six patients reporting complete relief, had previously had alcohol injections in branches of the trigeminal nerve or avulsion of peripheral branches of the nerve. As pain recurred in six months to two years, treatment with vitamin B_{12} was given. One of the patients reported "gratifying" but not complete relief of pain. He had had slight recurrences, although the pain was not sufficient to warrant surgical interference. Another patient obtained relief for two weeks on two separate occasions after courses of vitamin B_{12} therapy, but surgery was required for complete relief.

Rectal Digitalization

M. Miller and J. G. Ottenheimer (*Amer. Pract. & Digest of Treat.* 5:103, 1954) feel that the administration of digitalis by rectum has been neglected during recent years. Clinically, however, the rectal administration of digitalis may not only be equally effective as the oral or parenteral method, but in some cases offers distinct advantages to the other routes.

To illustrate that full digitalization is possible, they selected 15 cases where severe or advanced heart disease was present and where the criteria of complete digitalization (such as full compensation, slowing of the heart rate, digitalis effect on the electrocardiogram, could be demonstrated. Several of their cases are still under rectal digitalis therapy after six years. They stay compensated and feel well.

Miller and Ottenheimer state more case histories could be added to show that rectal digitalization has a place in therapy, and often has advantages over the conventional oral and even parenteral routes of administration. Fortunately, most cardiac patients can be adequately treated with oral digitalis preparations. Rectal digitalis administration gives the best results in congestive heart failure with an intractably enlarged, firm, congested liver and massive portal congestion. It can be used over a long period of time without undue rectal irritation, and should by all means be used when, for some reason, the oral route is not feasible or causes too much gastrointestinal irritation, and parenteral administration would have to be continued over a long period. Rectal administration has the advantage of being less painful than parenteral, requiring less nursing care and may even avoid hospitalization of the patient, besides requiring less frequent visits to the physician.



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Readers' Questions

Hair Lacquers: We would like to know the difference between ordinary hair lacquer which has been used for a long time and the kinds which are used in pressure cans, and which are called spray nets or the like. Could you let us know how to make such products or give us information on their general composition? QUEBEC.

The older type products are suitable for applications in atomizers, squeeze bottles or directly on the finger tips. A typical preparation of this sort calls for the use of:

Bleached shellac	**18.0 parts**
Triethanolamine	**2.0 "**
Alcohol	**35.0 "**
Distilled water	**45.0 "**
Soluble dye and perfume	**sufficient**

Melt the shellac with the triethanolamine and add to 20 parts of the water (boiling). Cool, then add the perfume and dye dissolved in the alcohol. Finally stir in the balance of water.

Preparations to be dispensed in the form of low pressure aerosols from cans are somewhat similar in composition but special consideration must be given to the question of compatibility and other factors. These consist of two main types. The first group comprises the water-soluble wave lacquers based on the use of polyvinyl pyrrolidone. The shellac type which uses shellac and methyl methacrylate or some other resin as essential ingredients, comprise the second group.

Analgesic Liniment: Can you send me a formula for an effective analgesic liniment? NEW YORK CITY.

I think the following formula as suggested by Belanger is in line with what you want:

Methyl salicylate	**16 fl. oz.**
Menthol	**1 oz.**
Eucalyptol	**2 fl. oz.**

Dissolve the menthol in the methylsalicylate by the aid of gentle heat (water-bath) and add the eucalyptol to the mixture. This is an external preparation for the relief of muscular aches and pains, sprains and bruises. It is recommended as a local relief for neuralgia and also as an application for chest and head colds.

Another formula for an analgesic liniment as given in the Pharmaceutical Recipe Book, calls for:

Menthol	**45 Gm.**
Olive oil or peanut oil	**300 cc.**
Oil of camphor	**250 cc.**
Methyl salicylate, to make	**1000 cc.**

Mix the oil of camphor and 200 cc. of methyl salicylate and in this dissolve the menthol. Add the olive oil and sufficient methyl salicylate to make the product measure 1000 cc.

Urea in Anti-Perspirants: We would greatly appreciate it if you could tell us the reason for including urea in the formulation of anti-perspirants. In our opinion, urea is used as a conservative but we would like to be sure. MEXICO.

Urea is used in anti-perspirant preparations as an inhibiting agent. In such products urea serves to retard acidity, skin irritation and fabric damage. I think you will get considerable information on the role of urea in anti-perspirants by checking the Wallace patent, U.S. patent No. 2,236,387, March 25, 1941. This patent was declared invalid in 1948 but the information in it is still pertinent. A copy of this patent can be obtained by writing to the Commissioner of Patents, Washington 25, D.C. and enclosing 25 cents.

The use of urea in a product of this type is illustrated in the following formula for a liquid anti-perspirant:

Aluminum chloride	**13.0 per cent**
Urea	**3.0 " "**
Distilled water	**84.0 " "**

Dissolve the aluminum chloride and urea in the water and filter. The use of a filter press is recommended, but filtration through paper with the aid of diatomaceous earth (Kieselgur) will do. The solution should not come in contact with metal, especially not with iron.

(Continued on Page 743)

Perfumer's Shelf

Backhousia Citrodora Oil

A. R. Penfold, F. R. Morrison, J. L. Willis, H. H. G. McKern and M. C. Spies (*J. Proc. Soc. N. S. Wales* 85:123, 1952) report that a new physiological form of *Backhousia citrodora* has been observed in the rain forest in Queensland, growing together and morphologically indistinguishable from the type species. The essential oil contains from 62 to 80 per cent of *l*-citronellal, as well as *d*-isopulegol, citronellol, and esters. The type species from the same area contains 91 to 92 per cent of citral.

The oil was distilled from the foliage with ayield of from 0.45 to 0.86 per cent. Its properties ranged as follows:

Specific gravity	**0.8668-0.8738**
Specific rotation	**–9.80°-12.36°**
Index of refraction	**1.4526-1.4571**
Ester number	**9.3-11.5**

Essential Oils and Microorganisms

The effect of essential oils on the inhibition and thermal resistance of microorganisms in acid food products has been studied by E. E. Anderson, W. B. Esselen, Jr. and A. R. Handleman (*Food Research* 18:40, 1953). In their work, the investigations conducted on the minimum concentrations of various essential oils necessary to prevent the growth of *Leuconostoc mesenteroides, Saccharomyces cerevisiae, Saccharomyces ellipsoideus, Lactobacillus lucopersici, Zygosaccharomyces globiformis,* and yeast spoilage organism No. 7D in dextrose broth at pH 7.2 revealed a wide variance in the effectiveness of the different essential oils. Of the 12 essential oils considered in this investigation mustard, garlic, onion, and cinnamon had the greatest inhibitory activity. When the pH of the dextrose broth medium was lowered to 4.0, 4.5, or 5.0, depending upon the growth requirements of the test organisms, the inhibitory action of most of the essential oils was increased. Only the yeast spoilage organism No. 7D consistently required as high or higher concentrations of the essential oils at the lower pH level. Cinnamon and garlic oils were more effective than clove and garlic dill flavor oils in lowering the thermal resistance of the yeast spoilage organism No. 7D in a brine.

Three Gum Turpentines

In a continued study of the composition of gum turpentine of pines, N. T. Mirov, P. M. Iloff, Jr. and L. B. Gordon (*J. Am. Pharm. Assoc.*, Scient. Ed. 43:13, 1954) present data on the turpentine of *Pinus pungens, Pinus glabra* and *Pinus teocole*. It is pointed out that *pinus pungens* Lamb. (table-mountain pine) is a tree which in a forest occasionally reaches 60 feet in height, with a trunk two to three feet in diameter; when open-grown, it is rather scrubby—20 to 30 feet high, with a short, thick trunk. *Pinus pungens* grows on dry gravelly slopes and ridges of the Appalachian Mountains from southern Pennsylvania to North Carolina, eastern and middle Tennessee, and Georgia. A sample of oleoresin was collected from trees of this species in Buncombe County, N. C. The turpentine from this oleoresin possessed the following characteristics:

Specific gravity	**0.8564**
Index of refraction	**1.4682**
Specific rotation	**—23.7**

Judging by the distillation behavior, *Pinus pungens* gum turpentine consisted of about 70 per cent *l*-α-pinene; 20 per cent *l*-β-pinene and eight to nine per cent *l*-limonene. The polymerized residue amounted only to about one per cent of the weight of the oil.

Pinus glabra Walt. is the spruce pine of the southeastern United States. In South Carolina it is called king's tree; in Florida, poor pine, which shows the inconsistency of common names. Spruce pine attains its largest size—up to 120 feet in height—in northwestern Florida. It grows as far west as southeastern Louisiana. A sample of the oleoresin from trees growing in Perry County, Miss., yielded 22.3 per cent of turpentine, which had this following properties:

Specific gravity	**0.8599**
Index of refraction	**1.4735**
Specific rotation	**—4.65**

It was found that *pinus glabra* turpentine contained *dl*- and *d*-α-pinene, 45 per cent; *l*-β-pinene, 45 per cent; *l*-limonene, eight per cent; and possibly a small amount of sesquiterpene containing hydrochloride with very low melting point.

Pinus leocole Schlecht et Cham. is a widely distributed, variable Mexican pine, growing at elevations ranging from 4,500 to 10,000 feet. It occurs from the Northern States of Durango, Coahuilla, and Nuevo Leon to Guatemala. A sample of the oleoresin of this pine, collected at El Salto, Durango, yielded 24.2 per cent of turpentine. The crude turpentine had the following physical characteristics:

Specific gravity	**0.8578**
Index of refraction	**1.4669**
Specific rotation	**+7.6**

This turpentine consisted of 92 per cent *dl*- and *d*-α-pinene, and three per cent of sesquiterpene, the major constituent of which is *d*-longifolene.

Phellandrene in Bel Leaf Oil

The presence of *d-alpha*-phellandrene in the essential oil of the leaves of bel (*Aegle marmelos*) from India has been definitively established by A. Bhate (*J. Indian Inst. Sci.* 35A:39, 1953). For identification the maleic anhydride adduct of the terpene was prepared, and

TOP NOTES by Fritzsche

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April—Sweet Pea
or Daisy
May—Lily of the Valley
or Hawthorn

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the mutarotary property of its nitroside was observed.

Aromatic Woods

Although there may be many trees possessing aromatic constituents, B. K. Mukherji (*Soap* 6:3, Oct. 1953; also *Indian Soap J.* 18:268, 1953) limits his discussion on aromatic woods to sandal wood, cedar wood, rosewood and agar wood. He points out that the original home of sandalwood was Sunda Islands in the Indonesian Archipelago. Seeds were first brought to India in the Middle Ages. The best wood is found today in Mysore and Coorg. The heartwood and roots are used for distillation purposes. The ground roots are steam distilled with great care so that the wood does not come into contact with hot external parts of the boiler. If this be allowed to happen, the oil develops a musty odor. The average yield of oil in Mysore varies from about 105 to 110 pounds per ton of wood. The main constituent (90 per cent) of the oil is santalol which is present as a mixture of the two isomers, α and β-santalol. There are also present traces of santalene, santalone, santene, and isovaleric aldehyde. The physico-chemical constants are as follows:

Specific gravity	**.973 to .985**
Optical rotation	**—13° to —21°**
Refractive index	**1.504 to 1.51**
Solubility at 20°	**3 to 6 ols. in 70 per cent alcohol**
Acid value	**0.5 to 4**
Ester value	**3 to 17**

Sandalwood oil and santalol, extracted from the oil, are indispensable basic materials in the preparation of first class extrait perfumes. An oil of this kind can be used as a basis for a heavy, oriental type of perfume. The aldehyde group, too, cannot do without a smaller or larger portion of sandalwood oil. Sandalwood provides an excellent background for the modern perfumes of the last few years and gives them a more animal note. Isolated santalol, provided it has not been burnt in the distillation process, is an important basic ingredient in a number of floral perfumes. This sesquiterpene alcohol gives body to muguet, while it gives rose a very distinctive character.

The oil is often adulterated with castor oil, cedar wood oil, glyceryl aldehyde or with the West Indian oil. Such adulterations can be detected respectively by the increase in ester value, decrease in solubity, higher specific gravity and lower optical rotation and lower specific gravity and santalol content.

Mukherji observes that there are various species of cedars but the oil is distilled mainly from two varieties of wood, *Juniperous Virginiana* L. or red cedar growing in N. America & Kenya and from *Junipera Mexicana*, which grows in Texas. The physical and chemical constants of the two varieties are as follows:

	Virginiana	*Mexicana*
Color	colorless to light yellow	colorless to yellow
Appearance	slightly viscous	slightly viscous
Specific gravity	0.945-0.965	0.950-0.960
Refractive index	1.5020 to 1.5070	1.5050 to 1.5070
Optical rotation	—27° to —45°	—35° to —50°
Solubility in 95 per cent alcohol	5 vols.	all proportions

It is also soluble in all proportions in most fixed oils and in mineral oils.

To obtain the oil the wood is chopped, dried, ground to fine particles and then steam distilled. The yield varies between two to 4.7 per cent on the weight of the wood. The older the tree the higher the yield of oil. The oil consists mainly of a sesquiterpene cedrene ($C_{15}H_{24}$). The chief oxygenated constituent of the oil is cedrol $C_{15}H_{25}O$. A bicyclic primary sesquiterpene alcohol cederonol has also been found to be present in the oil.

The name of Brazil is associated with oil of bois-de-rose or rosewood oil. In that country the oil is obtained by steam distillation of woods chipped in small pieces. The distillation is carried out for two to three hours in copper or galvanized steel vessels. The yield is 0.8 to 0.85 per cent. The physicochemical properties of the oil are as follows:

Specific gravity	**.875 to .895**
Optical rotation	**—4° to +5°**
Refractive index	**1.462 to 1.4685**
Total alcohols	**84 to 92 per cent**
Color	**Pale yellow to yellow**
Solubility	**2 vols. of 70 per cent alcohol**

In Mexico, an oil is obtained from the species *Bursera delpechiana* but this oil should not be confused with the Brazilian linaloe oil or oil of bois-de-rose. The difference will be evident from the physico-chemical constants given below:

Specific gravity	**.8883**
Optical rotation	**1.5**
Refractive index	**1.460 to 1.465**
Ester value	**29.2**

In discussing agar wood, Mukherji states that agar, which is better known as *Aguru* is obtained by steam distillation of fungus (*Aspergillus*)—infected wood of *Aquilaria agallocha*, a large evergreen in the hill forests of Khasia, Garo, Naga, Cachar and Sylhet. Attempts at artificial inoculation of healthy trees with *Aspergillus* with a view to develop the agar odor have only met with limited success.

In India, agar is in great demand. The chips are used in incense. The attar obtained by distilling the chips of agar by the wet process is used as a scent. The manufacture of agar attar is a prosperous cottage industry in certain villages in the district of Sylhet in East Pakistan. The attar is exported *via* Calcutta and Bombay to Arabia, Turkey and Persia, where it is highly prized.

The yield of the oil depends on the quality of raw material employed and varies from 0.31 to 1.51 per cent. The specific gravity and refractive index of samples of the oil distilled in the Research Laboratory at Dehra Dun from different grades of the wood were reported as follows:

Quality of wood	*Sp. Gr. at 25°*	*Ref. Index at 25°*
Yellow wood	—	1.4940
Wood dust	0.9934	1.4841
Brownish wood	1.0075	1.5030
Superior Dhun wood	—	1.4866
Superior Blackwood	1.0118	1.5012
Aba, black agar	1.0118	1.5020

Agar oil is viscous. Its color is golden yellow to yellowish brown. Its odor is balsamic and the aroma is mild and pleasant. It possesses high fixative properties.

Oil of Metrosideros Umbellata

From New Zealand, R. E. Corbett and W. G. Hanger (*J. Sci. Food Agr.* 4:508, 1953) report that the volatile oil of *Metrosideros umbellata* contains *alpha*-pinene, myrcene, limonene, *alpha*-terpineol, myrtenyl acetate, geranyl acetate, aromadendrene and cadinene. The oil also contains three new compounds, including a terpene acetate that boils at 87° C. and has the following properties:

Specific gravity	**0.9260**
Specific rotation	**—27°**
Index of refraction	**1.4814**

Also present is metrosiderene, a new sesquiterpene which, boiling at 98° C., has the following characteristics:

Specific gravity	**0.9155**
Specific rotation	**—8.05**
Index of refraction	**1.5041**

A sesquiterpene alcohol, boiling at 112 to 116° C., shows the following constants:

Specific gravity	**0.9710**
Specific rotation	**+1.3°**
Index of refraction	**1.5030**

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Industry's Books

Textbook of Pharmacology for Nurses, *by Margene O. Faddis, R.N., M.A., and Joseph M. Hayman, Jr., B.A., M.D., Western Reserve University, Fourth Ed., 520 pp., Illus., J. B. Lippincott Co., Phila., (1953), Cloth,* **$4.50.**

Thoroughly revised, this new fourth edition includes current and late developments in drug therapy. It emphasizes the nurse's increased responsibilities in the care of patients being treated with drugs. Throughout the text, the stress is placed on the application of knowledge by the student to specific nursing situations, rather than the mere accumulations of facts. Many new drugs have been added, including, among others, mephenesin, new inhibitors of cholinesterase, sympatholytics, ganglionic-blocking agents, veratrum and procaine amide hydrochloride, acid-binding, resins, new antibiotics and antimalarial drugs, new drugs in the treatment of tuberculosis, leprosy, new anticonvulsant drugs, cortisone and corticotropin, radio-active isotopes, dimenhydrinate and antifungal agents.

Communicable Disease Control, *by Gaylord W. Anderson, M.D., Dr. P.H., Mayo Professor and Director, School of Public Health, University of Minnesota, and Margaret G. Arnstein, R.N., M.P.H., Chief, Division of Nursing Resources, United States Public Health Service, Third Ed., 500 pp., The MacMillan Co., New York, (1953), Cloth,* **$6.50.**

As public health problems and causes of death, the communicable diseases have declined in importance. This necessitated a change in perspective on the part of the authors of this work. In preparing this revision the authors have tried to recognize this change in perspective without losing sight of the need for continued watchfulness. Three new chapters have been added to this edition. One of these deals with the control of communicable diseases in the school. Such a chapter seems indicated as the schools present many special administrative problems. For ease of reference, much of the school material that appeared under other headings in the first two editions has been brought together in this new chapter. The other new chapters deal with hepatitis and Q fever, problems of growing importance to health departments.

Pharmacology, *by J. H. Gaddum, Sc.D., F.R.S., Professor of Pharmacology in the University of Edinburgh, Fourth Ed., 562 pp., Illus., Oxford University Press, New York, (1953), Cloth,* **$8.**

Powerful new drugs continue to be discovered and this book continues to grow. The whole text has been revised and there are few pages which remain as they were. The main additions and alterations deal with the anterior pituitary, synthetic analgesics, the blockade of autonomic ganglia and neuromuscular junctions, vitamin B_{12}, nuclear poisons and antibiotics; there are 18 new figures. In this fourth edition, Professor Gaddum has taken full account of every noteworthy addition to current knowledge, while also taking particular pains to preserve the essentially fundamental character of his approach.

Textbook of Physiology. *(The Activities of the Living Body), by Caroline E. Stackpole, A.M., Formerly Associate in Biology, Teachers College, Columbia University, and Lulie Clemson Leavell, R.N., A.M., M.S., Associate Professor in Nursing Education, Teachers College, Columbia University, 418 pp., The Macmillan Co., New York (1953), Cloth,* **$5.**

There are certain fundamental problems that confront students of physiology, regardless of their primary interest. These problems are covered in the eight sections of this work, namely —Section One: Maintaining a Balance Between Rest and Exercise, Work and Play. Section Two: Maintaining an Awareness to the Environment. Section Three: Maintaining Circulation. Section Four: Maintaining a Constant Oxygen Supply. Section Five: Maintaining the Protective Mechanism of the Body. Section Six: Maintaining the Nutrition of the Body. Section Seven: Maintaining the Fluid and Electrolyte Balance of the Body. Section Eight: Perpetuating the Human Race.

Growth and Differentiation in Plants. *(A Monograph of the American Society of Plant Physiologists), Edited by Walter E. Loomis, Professor of Plant Physiology, Iowa State College, The Iowa State College Press, Ames, Iowa, (1953), 458 pp., Cloth,* **$7.50.**

The Monograph Board of the American Society of Plant Physiologists presents Growth and Differentiation in Plants as the third volume of its Monograph Series. The authors and topics of the Monograph have been chosen to give a rounded and thorough coverage of a complex field. Chapters Three and Four contain new research material, and many previously unpublished results are scattered throughout the volume. The primary concern of the work, however, has been a critical evaluation of the present status of the various topics. Most of the chapters contain both historical material and recent publications and theories, together with the authors' evaluation of these and of the probable future course of research progress. Such treatments are of more general and lasting interest than publications of the "recent advances" type. The specialists in any field follow the new literature more closely than is possible in monographic treatment. The specialist as well as the general reader, however, can profit from critical, general discussions of their field by other specialists.

Diseases of Women.
By Robert James Crossen, A.B., M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, Tenth Edition (1953), 935 pp., 950 Illus., including 41 in color, The C. V. Mosby Co., St. Louis, **$18.50.**

As with previous editions, the endeavor here has been to present for the student the basic facts and salient developments of the biologic and physiologic investigations which are making history in the gynecologic field, and to bring to the practitioner a comprehensive systematic judicial consideration of the diagnostic and therapeutic aids made possible by these great advances in knowledge. Contents: Chapters 1—Anatomy and Physiology. 2—Gynecologic Examination and Diagnosis. 3—Diseases of the External Genitals and Vagina. 4—Relaxation and Fistulae. 5—Displacements of the Uterus. 6—Inflammatory and Metabolic Disturbances of the Uterus. 7—Nonmalignant Tumors of the Uterus. 8—Cancer of the Uterus. 9—Pelvic Inflammation. 10—Other Diseases. 11—Diseases of the Ovary and Parovarium. 12—Malformations. 13—Menstrual Disturbances. 14—Sterility and Sexual Disturbances. 15—Miscellaneous Disturbances. 16—Medicolegal Points in Gynecology.

Metabolic and Toxic Diseases of the Nervous System. *The Williams & Wilkins Co., Baltimore, (1953), 604 pp., Illus., Cloth.* **$10.**

With the discovery of antibiotics, infections of the nervous system are no longer the serious problem they were twenty years ago and the major problems confronting the neurologist of the present day are the convulsive disorders, the demyelinizing diseases and the so-called degenerative and heredodegenerative diseases of the central nervous system and the neuro-muscular apparatus. The convulsive disorders and the demyelinizing diseases have been the subject of discussion at recent meetings of the association and it was the decision of the Trustees to devote the thirty-second annual meeting to a consideration of the toxic and metabolic diseases of the nervous system on the premise that the degenerative diseases may be related to toxic or metabolic disturbances. It was, therefore, the purpose of the Program Committee to attempt to have a presentation of the known facts regarding the metabolic disturbances and toxic substances, which are the cause of disease of the nervous system, in the hope that this will lead to further studies which will give us a rational basis for prevention and treatment.

Vegetable Fats and Oils, *by E. W. Eckey, E. W. Eckey Research Laboratory, American Chemical Society Monograph Series No. 123, 836 pp., Book Div., Reinhold Publishing Corp., New York, (1954), Cloth,* **$16.50.**

All of the most important vegetable fats and oils are fully described here, and are arranged according to the botanical relationships among the plants which produced them. Latest information is included on the plant from which each kind of fat is derived, the composition of the fat-bearing part, and the characteristics of the fat itself. A great many tables and figures offer at-a-glance comparisons of closely related fats and oils. Although no attempt is made to cover completely all the many methods of processing and utilizing vegetable fats and oils, a great deal of general information on these subjects is presented in the introductory chapters and with the description of individual fats and oils. Many references, each carefully screened for reliability and usefulness, provide an excellent guide to further study. This work will prove of exceptional value to all chemists and other personnel engaged in producing, processing or utilizing vegetable fats and oils, and of great interest to agronomists, nutritionists and others working with oilbearing plants and their products.

Laboratory Instruments, Their Design and Application, *by A. Elliott, Ph.D., D.Sc., Courtaulds Ltd., and J. Home Dickson, M.Sc., Royal Navala. Scientific Service, 414 pp., Illus., Chemical Publishing Co., Inc., New York, (1953), Cloth,* **$7.50.**

The early chapters of this work deal with the properties of various materials and their treatment and use in the construction of instruments. There is a chapter on the preparation of drawings for workshop use and their reproduction. Succeeding chapters are devoted to methods of construction to suit special requirements and in particular the kinematic design of instruments is treated at some length. There are chapters on vibration insulation, sensitivity, and methods of measurement. Chapters on glass and on the uses and working of glass are followed by a description of a number of optical instruments and devices. Tables and diagrams illustrate the uses of lenses, mirrors and prisms. Finally, there is a chapter on the applications of photography and several appendices containing miscellaneous information.

Gehes Codex on Pharmaceutical Specialties, *Edited by Georg Otto, Apothecarian, Berlin, 8th Ed., (German, 1953), 950 pp., Texstar Co., Nwe York, Cloth,* **$24.75.**

The revised and enlarged, up-to-date Eighth Edition of this work has just been published in Western Germany and is now available in this country. Gehes Codex of pharmaceutical specialties is the unique source of information regarding compounds, indications, preparations, formulas and manufacturers of pharmaceutical specialties. This Codex describes over 13,000 pharmaceutical specialties arranged in alphabetical order for easy reference. A new edition of this work was eagerly awaited by apothecarians and research scientists since it has been out of print for a long time. Additions to the Codex are published from time to time to keep it as nearly up-to-date as possible. It is gratifying that this valuable reference work on pharmaceutical specialties, which has gone through seven previous editions, is now available again.

Most of the important compounds are described in Latin.

Quantitative Organic Analysis via Functional Groups, *2nd Ed., Sidney Siggia, Ph. D., Research Analyst Central Research Laboratory, General Aniline & Film Corporation, 227 pp., John Wiley & Sons, Inc, New York, (1954), Cloth,* **$5.**

It is the purpose of this second edition to bring the subject up to date as far as possible. New procedures have been added, and also added are some procedures which were not included in the first edition. A section is also included on some of the techniques and reasoning involved in developing new methods of functional group analysis or in making changes in known methods in order to analyze samples where the methods as described in the literature cannot be applied. A section is also included on the use of quantitative functional group analysis in the identification of organic compounds, and, since there has been some interest in the use of phase diagrams in organic analysis of mixtures, a portion of the section on physical methods is devoted to this type of analysis with indications how functional group methods can be applied.

(Continued on page 744)

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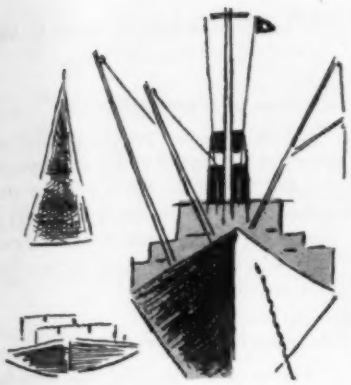
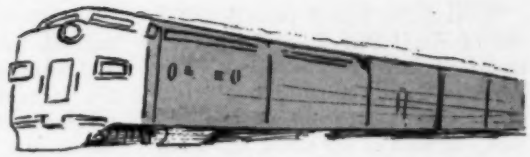


Abreast Of The Markets



Markets More Active in April; Botanicals Are in Firm Condition; Vanilla Beans Remain Tight

The markets showed a great deal of activity last month in the botanical field. One botanical house states that it looks as though domestic botanical replacements will be more difficult to obtain this year than last. The reason given is that there has been considerable rainy weather which has adversely affected the crops and also has delayed collections.

The botanicals are very much on the tight side in many cases owing to severe shortages which have been developing over the last year.

On the chemical side of the market, quicksilver went up to $230 a flask last month, making this the highest figure the metal has reached since the end of World War I. Other items of interest include tartaric acid and the tartrates which are expected to become firmer in the next few months owing to the increased use of the materials in foreign countries.

Prices in essential oils remained exceedingly stable in April, with few changes noted, even in the citrus oils. This was surprising, since the season for heavier consumption in beverages is close at hand, and dealers had expected a greater interest in the oils than has been shown up to the present time.

Candelilla Harvesting

The Mexican ban on harvesting of the candelilla plant, used in wax production, has been eased to permit cooperative farmers in the states of Coahuila, Chihuahua, Nuevo Leon, Tamaulipas and Zacatecas to gather the plant provided they do it for their own account under the control and financing of the National Bank of Foreign Trade. They must not exceed the production limitation established by the Ministry of Agriculture and Livestock. The general ban, which continues in effect, has been extended until September, 1955.

India Ban on Mercury Salts

India has banned the export of mercury salts, such as mercury chloride and mercury sulfide. This has been effective since March. The export of metallic mercury has not been permitted since August 31, 1953. This new ban is designed to prevent conversion of metallic mercury into the salts, in which some firms had engaged, to circumvent the ban on the export of metallic mercury.

Stocks of mercury within the country, estimated at about 5,000 flasks of 75 pounds each, are believed to be sufficient for local consumption.

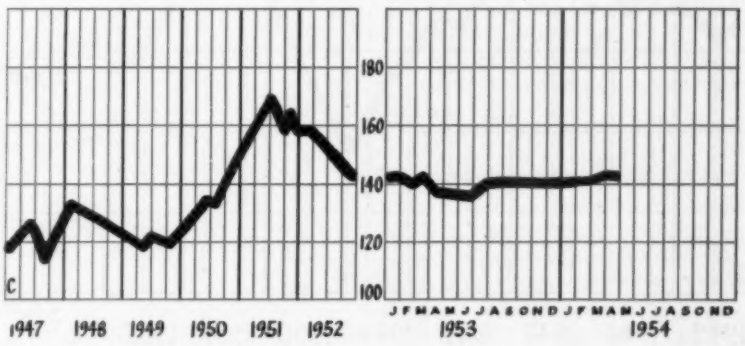
Vanilla Beans Remain Firm

The condition of the vanilla bean market continued to display a very firm tone, and it appears as though this trend will continue for at least another year. Bourbon beans ranged from $10.25 to $10.75, Mexican whole beans, from $10 to $10.50, and Mexican nuts, from $9.50 to $10 a pound.

Dealers report that growers at the origin having become discouraged by the previously low prices, turned to other crops, leaving their vanilla vines. Now that the prices of the beans are becoming more attractive to them once again, these growers will probably start

(Continued on page 725)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index declined from 143.7 to 141.8.

Prices quoted in this section were current on the first of this month.

Quicksilver Advances to $230, Record High; Tartaric Acid Displays Firmer Tone; Crude Iodine Lower, Asafoetida Up

Marking the highest price since the end of World War I, quicksilver last month advanced to $230 a flask. This development is attributed to the fact that the U. S. Government, in stockpiling supplies of the metal, has taken out of circulation a very large portion of the material coming from Spain and Italy.

It is believed that there will be a scarcity of the metal through the summer, and possibly through the rest of this year.

Tartaric Acid Getting Firmer

Although the price of tartaric acid has ranged about 38 cents a pound, there are signs of a definite firmness developing over the coming months. It seems that countries behind the Iron Curtain have been stepping up their consumption of tartaric acid originating in foreign sources. This in turn will cause domestic consumers to depend more heavily on U.S. stocks rather than on the foreign sources.

Gum Karaya Firm

While there was very little activity on the spot market in gum karaya, reports indicate a definite firmness at the origin. It appears at the present time as though the item will become increasingly difficult to obtain as time goes on. The approaching rainy season will probably hamper the collections of the gum to a great extent. This, coupled with the fact that there is hardly any carry over material available from last year, is expected to bring about a fairly tight situation in the market.

Crude Iodine Reduced

For the first time in about a year, the price of crude iodine declined by 15 cents. The drop was begun by Chilean producers of the item and continued by the producers in this country. The quotation is now $1.15 a pound.

Up to the present time there has been very little competition from Japanese sources as far as iodine is concerned, owing to the already lower price level which has been in effect for a year. Sources in the trade expect Japanese shippers to follow suit in the price reduction of the material.

Asafoetida Gum 5c Higher

The price of asafoetida gum advanced to 35 cents a pound last month. This is important in that the item has been held at a steady level for a very long time, and this price change represents the first advance. Supplywise, there are sufficient stocks on hand to take care of all consumer needs.

Cream of Tartar Steady

Cream of tartar prices remained unchanged last month at 33 cents a pound, ranging up to 35 cents. There were sufficient stocks on the spot market to handle all needs in the trade, a condition which is expected to continue without difficulty.

Arabic Gum Firmer

Prices of arabic gum advanced last month, with the result that the demand in some qutrters fell off slightly. The U.S.P. powder went up from 19 cents to 23 cents a pound, while the amber sorts was higher at 17 cents a pound.

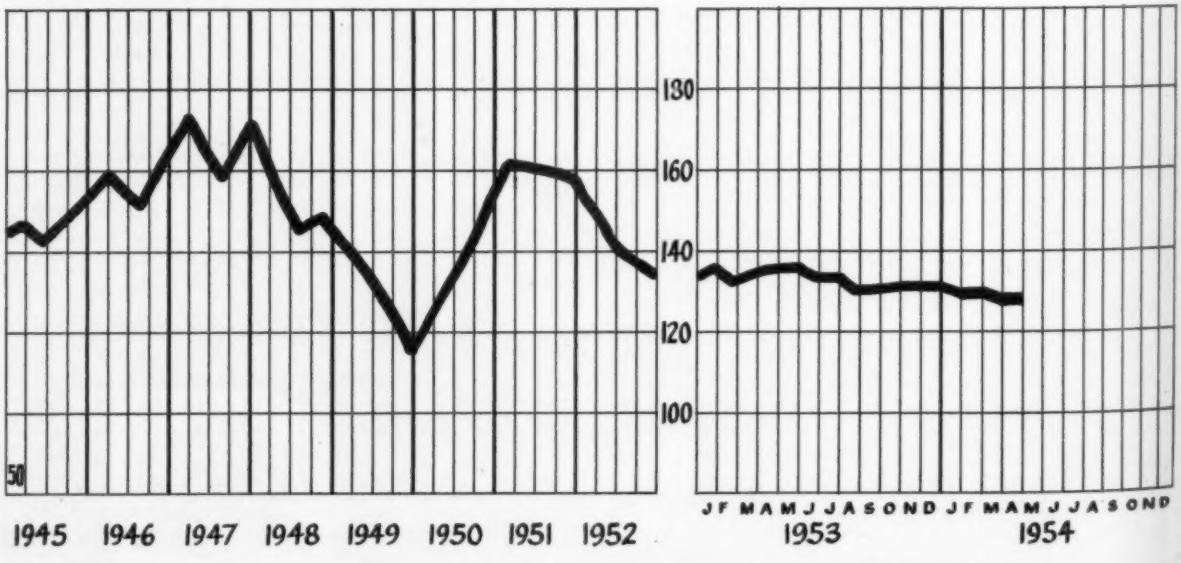
Arnica Flowers Scarce

There is a very limited supply of arnica flowers in the spot market. The true Montana flowers are just about non-existent, with the price pegged at $1.35 a pound. At the same time, stocks of Mexican arnica flowers, the non-official variety, are also scarce. No sign of easing up appears probably for the time being.

Henbane Leaves Steady

The price of henbane leaves remained at 40 cents a pound last month, extending up to 45 cents, with the demand being maintained at a steady rate.

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for April advanced slightly from 127.3 to 127.5.

APRIL PRICE CHANGES

UP

Agar Agar, No. 1 50c
Arabic Gum, Powd., USP 4c
Sorts, Amber 3c
Arnica Flowers 30c
Benzoin Gum, Sumatra 5c
Buchu Leaves 5c
Buckthorn Bark 2c
Camphor Oil, Sassafrassy 10c
Cedar Wood Oil 2c
Cumin Seed, Morocco 2c
Elemi Gum 4c
Gamboge Gum 20c
Ipecac Root 50c
Jaborandi Leaves 4c
Karaya Gum 8c
Lemon Peel 3c
Menthol, Natural 15c
Orris Root, Flor. 5c
Verona 7c
Pinus Pimulio Oil 40c
Safrol 5c
Sassafras Oil, Artificial 5c
Scammony Root 1c
Strammonium Leaves 2c
Wahoo Bark of Tree 30c
Wormwood Oil 50c

DOWN

Echinacea Root 25c
Ergot 75c
Iodine, Crude 15c
Lime Oil, Distilled 35c
Passion Flower 3c

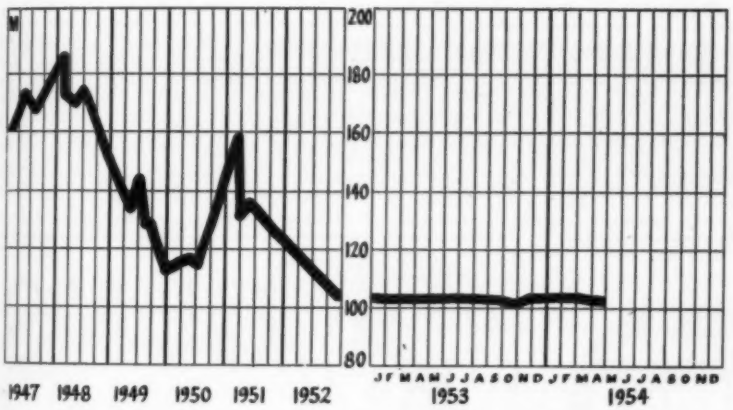
Balsam Tolu Tight

The price of balsam tolu remained in the range from $4 to $4.25 last month, but since the stocks in the spot market are very low, higher prices are expected in the near future.

Ergot in Favorable Position

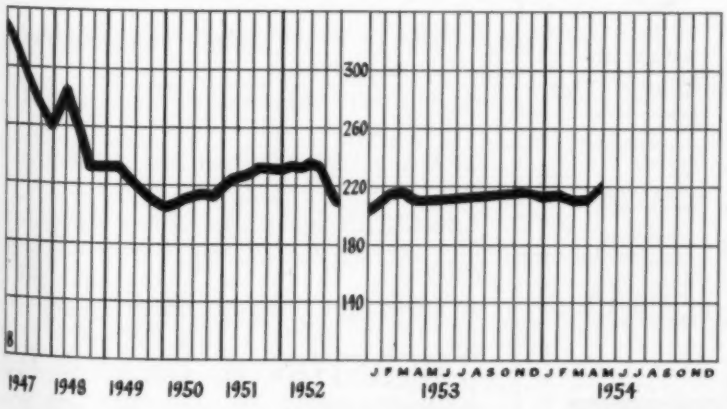
Ergot was reduced last month to $3 a pound, extending up to $3.20. A very active demand was reported last month, with supplies fully adequate to handle all of the market's needs.

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index went down from 102.7 to 102.3. Iodine was lower; menthol and mercury were higher.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index advanced from 211.8 to 224.2. Ergot was lower; Agar, buchu leaves, ipecac root and orris root were higher.

Vanilla Beans Remain Firm

(Continued from page 723)

migrating back to the vanilla plantations. However, it will take at least a year before there will be any distinct increase in the size of the vanilla bean yields.

It is expected that new-crop Mexican vanilla beans (whole) will not begin to appear on the spot market until next month, or even in July. In addition, the yield of the new crop is expected to be about 125,000 pounds, as compared to 200,000 pounds obtained last years. Even this latter figure is low, the normal yield is somewhere around 300,000 pounds per year.

Buchu Leaves Firmer

Buchu leaves advanced to 50 cents a pound in April, as a result of higher prices coming out of the producing area. It is said that stocks at the origin are very low and that replacements will now be available for at least a year. In view of these conditions, it appears as though additional price advances will occur from time to time.

Gamboge Gum Higher

Gamboge gum has advanced to $1.25 a pound, an increase of 20 cents over the past month. The main reason for this development seems to be the unsettled world conditions in the Far East, source of the material.

Ipecac Root Quite Scarce

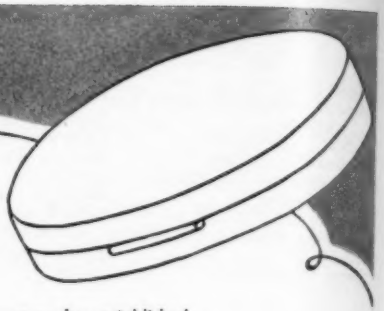
Supplies of ipecac root from Central America have dwindled to almost nothing in recent months. One very important reason is that, during the New York dock strike, the shippers sent all the root they had to London.

Another factor is the high cost of labor at the origin, as well as its scarcity. The current price is $6.50 for the Brazilian root, while the Central American root cannot be had at the present time. It is expected that it will take some time before shipments are resumed from this area.

Condurango Bark Very Scarce

There is no condurango bark available in the spot market, according to one source, which states that the producing area is also completely devoid of stocks. If prices were being quoted on this item it is suggested that they would range from 35 to 40 cents a pound.

Plymouth



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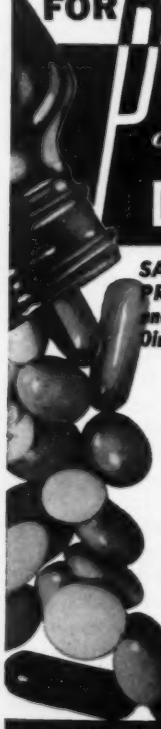

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The supply picture of agar agar is extremely tight at the present time, with spot prices ranging from $4 for whole material up to $4.50 for the powder form. Although new-crop material is expected in a very short time from Japan, demand for agar is so strong that it is feared any new arrivals will be bought up without delay. Additional shipments of the botanical are expected in June and July; however, these arrivals probably will not relieve the situation for very long.

Chamomile Flowers Favorable

A slight reversal in chamomile flowers has improved the market picture of this item. Shipments of the Hungarian variety have been received in this country and have helped push the price of the high-quality flowers down to 55 cents a pound.

Petitgrain Oil Stronger

There was no change in the spot price of petitgrain oil last month; however, dealers were of the opinion that the oil would become firmer in the future. Reports from South America indicate that supplies are on the limited side and are expected to remain that way for the time being.

Dillweed Oil Remains Firm

Dillweed oil remained in the vicinity of $4 last month and was expected to show a firmer tendency owing to a rather active demand and a lack of new supplies.

The pickling season is getting under way and this, coupled with the fact that the carryover from last year is very limited, means that dillweed oil stocks will not be plentiful. In addition, it will be fully two or three months before any new-crop material reaches the spot market.

Citronella Oil Firm

Citronella oil is reported to be on the firm side in most quarters for all the types of citronella oil, including that from Ceylon, Formosa and Java.

Lemon Oil Unchanged

The price of lemon oil remained at $7.25 last month for the California material, and $6.50 for the Italian. The heavy seasonal demand at this time of the year is said to have begun to be felt in some quarters. Although additional supplies will be available in another month or two, there did not seem to be much chance for any relief at the present time.

Clove Oil Steady

The price of clove oil remained in the range between $4.25 and $5, with some sources expecting higher prices in the near future. How long this trend may last is a question, in view of the fact that the crop of clove spice is said to be quite sizable. This would seem to indicate that ample supplies of oil will soon be available, thereby creating a softer market.

Geranium Oil Stronger

Although the price of geranium oil remained at $10 for the African variety and at $12 for the Bourbon oil, spokesmen indicated that it was a good deal stronger at the origin.

Orange Oil Strength Expected

Although there were no changes in orange oil prices during April Spokesmen were looking for a tighter market during May and June, when the full consuming season gets under way. American cold pressed orange oil was priced from 90 cents to $1.75, and the American distilled, from 80 cents to $1.25.

Lime Oil Activity Expected

Although the price of lime oil went down to $6 a pound from the previous figure of $6.35 last month, the oil is expected to show considerable strength in the coming months when the heavy consuming season arrives.

The expressed oil was quoted from $7.85 to $8.50 during April.

Lemongrass Oil Steady

Although there were no changes in the price of lemongrass oil last month, there are signs of the market beginning to weaken. Some reports have it that dealers are anxious to stimulate buying of the oil and therefore they are shading the price in a few quarters.

Spanish Peppermint Oil Output

A 90-hectare zone planted to peppermint in Leon Province, Spain, said to be the only peppermint farm in the country, produced 2,500 metric tons of dried leaves in 1953. They yielded 5,000 kilograms of peppermint oil, according to *Foreign Commerce Weekly*.

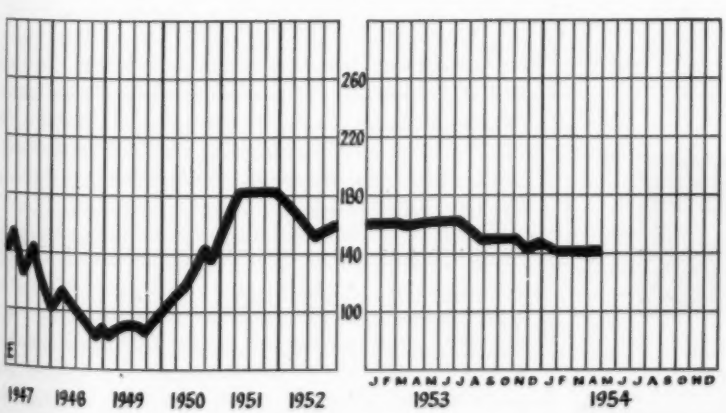
Spain's normal consumption of oil is estimated at 6,000 to 7,000 kilograms. A possible increase in production area could produce sufficient oil not only for Spain but also for export.

The entire output is reported to have been put under contract by a Leon dealer in essential oils and medicinal and industrial plants. A pharmaceutical firm in Barcelona reportedly has been buying the plant's entire production for its own use.

The dealer-distiller, according to the report, is seeking to export both peppermint leaves and oil to the United States.

Until World War II, Spain had practically no commercial peppermint production, and imported the oil from Italy and the United Kingdom.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index remained at 140.9. There were no changes.

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THE COSMETIC TAX

(Continued from page 655)

ucts at list prices "plus tax." Some manufacturers were of the opinion that they should now quote their goods in advertising at prices "tax included." But it was the opinion of the Board of Directors of the T.G.A. that such a step would be detrimental to eventual complete elimination of the tax.

Keeping a full knowledge of the cosmetic tax, and the amount of it in each transaction, before the buyers of cosmetics at all times is of untold benefit in efforts to have this tax removed completely. Any other attitude on the part of the industry is complete resignation to the existence of a cosmetic tax, the only question being how high it will be. And once such a tax becomes a permanent part of the tax structure of the nation, the determination of the rate of the taxation passes out of the hands of the industry involved and rests solely in the hands of the legislators. Then, every time the legislators are short on a tax bill, they just boost the cosmetic tax again because there is no one but a handful of manufacturers to protest, and anyway, cosmetics have to bear their share of any additional funds to be raised.

The resentment against the tax caused by the collection of this tax at retail, and by the quoting of prices of cosmetics at list "plus tax," could hardly be bought at any price. No amount of advertising, no amount of editorial cooperation on the part of newspapers, magazines and other media, could develop in consumers the resentment that is built in them when they actually have to pay out the money for the tax on each purchase that they make. Manufacturers must work hard to keep this condition from being changed, for if it is changed, they might find themselves fighting a losing battle against eliminating the tax completely, even, in fact, from having Congress put the tax back where it was—if they find themselves short at any particular moment.

UP-TO-DATE ON VITAMIN C

(Continued from page 647)

formulations. The investigation indicates that the most favorable pH for a mixture of the two vitamins appears to be between 6.0 and 7.0. It was also observed that a vehicle composed of equal parts of propylene glycol and glycerine affords maximum stability for the mixture.

The problem of vitamin C—vitamin B_{12} compatibility in solutions has been the subject of considerable investigation[21,22] and this new study is a further step in the solution of this problem. Pertinent, too, is a method[23] for improving the compatibility and stability of dry mixtures of these substances. To achieve this purpose, it is suggested, when including reducing substances like ascorbic acid or ferrous salts in tablets or hard-shell capsules of vitamin B_{12}, that the reducing

substances and the B_{12} be incorporated in separate granulations or powder mixtures. Each is then coated with 1 Gm. of magnesium stearate per 100 Gm. of granules or powder before being blended for compression or encapsulation.

Laboratory and clinical studies have continued to add data on the physiologic importance of ascorbic acid. It is now well known that all animals, except man, the primates, and the guinea pig, are able to synthesize their vitamin C requirements. Hence, for man a continual external supply is necessary for existence.

Experiments by King and his colleagues[24] have confirmed that the need for externally supplied vitamin C begins with the embryo. Working with glucose containing radioactive carbon atoms, they demonstrated that embryonic guinea pigs do not synthesize vitamin C from glucose but obtain their supply only from food eaten by the parent animal. Having shown that young animals get all their ascorbic acid, as such, from the mother, these workers pointed to the obvious conclusion that the mother's intake of vitamin C keeps both parent and offspring healthy.

This recalls the clinical studies of Slobody and his colleagues[25] in which it was shown that the newborn infant tends toward vitamin C saturation, even if it must deplete the mother. In a subsequent investigation, this group[26] found that the premature infant, like the full-term newborn, has a good vitamin C level at birth even where the mother is depleted. In view of these findings it seems wise to start ascorbic acid early, probably in the first week of life.

According to Pollack and Halpern,[27] vitamin C may act through the adrenals on both carbohydrate and protein metabolic processes. They also note that research has demonstrated the close relationship between ascorbic acid and the adrenal cortex, the pituitary, and other hormone secreting tissues.

During recent years, particular attention has been focused on the role of ascorbic acid in the function of the adrenal cortex because of the high concentration of this vitamin in the adrenal gland. Various aspects of the ascorbic acid-adrenocortical interaction have been and are being investigated.[28-31] A discussion of this complex subject is beyond the scope of this review, but those who are interested will find pertinent data in the reviews by Pirani[32] and by Bessey and his colleagues.[33]

However, mention should be made of studies[34] that point to the role of vitamin C as a regulator of the rate at which cholesterol is formed in the body; deficiency of the vitamin speeding the formation of this substance. In experimental work, guinea pigs fed a diet free of ascorbic acid showed a 600 per cent acceleration in cholesterol formation in the adrenal glands. Such findings suggest a new approach to research on normal fat and fat-like metabolism, as well as on atherosclerosis and associated diseases.[35]

Pharmacologic studies show that, when required, vitamin C can be administered safely in large doses.

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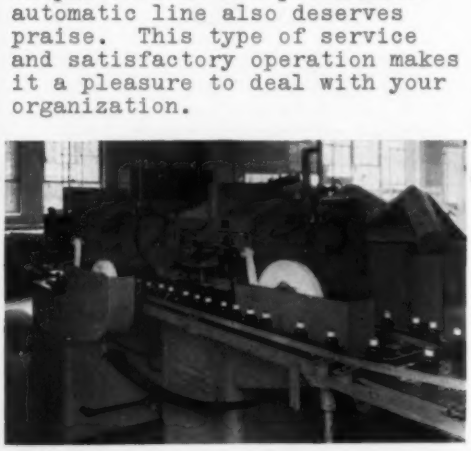

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For example, following studies to determine the effects of prolonged high dosage with ascorbic acid, Lawry and his associates[36] reported that four human subjects ingested 1 Gm. per day for four months with no harmful effects. There is general agreement[3,37,38] that several grams of ascorbic acid can be given orally or parenterally daily without producing evidence of toxicity.

However, opinions differ with regard to the requirements for ascorbic acid. The National Research Council recommends a daily allowance of 75 mg. of ascorbic acid for a normal man. In contrast, the Canadian Council on Nutrition and the United Kingdom daily allowance for vitamin C for an adult is 30 mg.[37] As noted by King[39] and others,[40] those recommending the lower British levels give little or no recognition to considerable evidence that points strongly toward physiologic and health gains from higher intakes.

For example, Roderuck[41] reported that her studies on women between the ages of 35 and 85 years indicates the strong possibility that their vitamin C nutritional status was more satisfactory when their intake of the vitamin was higher than the presently recommended level of 70 mg. daily.

Equally indicative is a German study[42] cited by Pollack and Halpern.[37] In this investigation varying amounts of ascorbic acid, ranging from 20 to 300 mg. daily, were given to workers as dietary supplements, together with thiamine and vitamin A. The number of illnesses per 100 workers during the 242-day observation period was highest in the workers receiving the smallest doses of ascorbic acid and lowest in the two groups receiving 100 to 300 mg. It was concluded that optimum allowances for vitamin C are probably very high, in the order of about 125 mg. per day.

As pointed out by Fishbein,[43] the Food and Nutrition Board of the National Research Council recommends a daily intake of 75 mg. of ascorbic acid for adults, 100 to 150 mg. daily during pregnancy and lactation, and 30 to 75 mg. daily for children. "Certainly," says he, "a small proportion of even high income level Americans get such quantities in their diet."

His view appears well substantiated by a number of nutritional surveys[44,45] made in various parts of the country on several age groups. Such surveys, says King,[39] have demonstrated an appreciable incidence of chronic vitamin C deficiency characterized by low intakes of antiscorbatic foods, varying degrees of tissue injury without signs of acute deficiency, and low tissue storage.

Indicative are the surveys[46] made in Pennsylvania to determine the nutritional status of school children. It was found that, next to vitamin D, ascorbic acid was the most deficient nutrient in the four to 12-year age group. Vitamin C met the recommended allowances in the diets of only 53 per cent of the youngest children, 55 per cent of those seven to nine years, and of 56 per cent of those 10 to 12 years.

In Utah, vitamin C, calcium and iron were the three nutrients found[47] to be most often deficient in the diets of many children from the Ogden area. Of all the

nutrients, ascorbic acid was the one found most frequently deficient in the diet of all boys and girls. However, more of the diets of the older children were deficient in the vitamin than were the diets of youngsters under ten years of age.

A study[48] of the breakfast food habits of a group of Maine high school students also showed that many of the teen-agers were not getting adequate vitamin C. For example, 40 per cent of the children had less than 15 per cent of the recommended allowance of this nutrient for breakfast. Diets for the whole day were low in calcium and vitamin C; less than 60 per cent of the students eating as much as 80 per cent of the recommended daily amounts of these two substances.

It is known that elderly persons who live alone often use foods extremely low in vitamin C content. Hence the frequent use of such colloquial terms is "widow's scurvy," "bachelor's scurvy," and "old maid's scurvy."[39] Recently, in a symposium on gerontology, Kirk[49] reported on clinical studies which showed that in aged hospitalized patients there were definite tendencies toward a decline in blood concentrations of ascorbic acid.

Climatic conditions may also play a part in low vitamin C levels. For example, the observations of Stransky and his coworkers[50] led them to the conclusion that ascorbic acid deficiency is a public health problem of paramount importance in the tropics.

Inadequate intake may be due to the high cost or seasonal variation in the availability of vitamin C-containing fruits and vegetables. Even when they are readily obtainable, their ascorbic acid content may be adversely affected by a number of factors. King[39] points out that vitamin C is easily destroyed in many foods during wilting, crushing, chopping, cooking, drying or simple storage.

Bauernfeind[3] also observes that this vitamin is more subject to destruction during processing and storage than most other nutritive essentials. This helps to explain why infants generally need more vitamin C than they get in milk, because this food is lowered in its ascorbic acid content by pasteurization and other processing.[43]

New data on the effects of storage on vitamin C have been presented by Huelin.[51] He calls attention to the familiar fact that atmospheric oxygen causes decomposition of ascorbic acid. However, he has found that the vitamin C content of canned foods continues to decrease throughout their storage life. This occurs despite the fact that only a minimal amount of free oxygen is present within the can immediately after processing and this disappears entirely within a month.

In addition to inadequate intake, there are a number of other factors that contribute to vitamin C deficiency. Impaired absorption from the alimentary tract, failure of utilization by the tissues, and inadequate storage may be contributing causes to low vitamin levels in the body.[52]

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It is relieving to know that Hollywood's Academy Awards won't trouble the movie-goer for another year. Next to figuring out whether death can be more beautiful by A-Bomb or H-Bomb, few things are more provocative than who will win an Academy Award.

• • •

Ever since Hollywood tried convincing the public that a poor movie looks better on a bigger screen, we've been impressed by the ironic choice of the Best Feminine Star: Audrey Hepburn. Even with a big screen the talented Miss Hepburn continues to look tiny.

• • •

The choice of Frank Sinatra was a heartwarming thing. His role of "Maggio" in "From Here to Eternity" was the most realistic thing we've seen since James T. Farrell made the naughty words written on backfences into a best selling "Studs Lonigan."

• • •

And picking William Holden for his work in "Stalag 17" was Hollywood at its typical best. "To be sure," explained his supporters, "others may have done better in 1954. But remember his work in 'Sunset Boulevard' a few years back." Which leads one to expect an Academy Award next season for Henry B. Walthall, for his work some time ago in "Birth of A Nation."

• • •

Naturally, Walt Disney got his share of honors. The man who made children scream louder than women at a glorified mouse did well with his documentaries. It's no more than fair that Hollywood's most consistent Academy Award winner should be one whose foundation is in fantasy.

• • •

Big disappointment at our house was the failure of Leslie Caron to win an "Oscar" for her work in "Lili." Having seen the picture six times, it was our feeling she did more to cement Franco-American relationships than anybody since Lafayette.

• • •

It must have been a bone in the throat of the movie makers to have to resort to competitive Television for broadcast of the Awards. Something like Macy's asking Gimbel's about prices.

• • •

Unfortunately, the Cosmetic Industry was not completely impressed by the Academy Awards. As one manufacturer put it: "I've got a customer who's a better actor than anything Hollywood has to offer. You should see this bum get dramatic when he ships me returns!"

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smoking may be one such factor. McCormick,[53] for example, reports that he has determined by laboratory and clinical tests that the smoking of one cigarette neutralizes approximately 25 mg. of ascorbic acid in the body. It is thus evident, says he, how difficult it is for the pack-a-day smoker to meet the bodily requirements for even the protective level of vitamin C from dietary sources.

Similar findings were reported by Bourquin and Musmanno[54] who found that the blood level of ascorbic acid was lowered by smoking. Working with three smokers and two non-smokers, they observed that the level of ascorbic acid showed a decrease of 66 per cent in the heaviest smoker who also inhaled, as compared with 11.4 and 16.6 per cent in the other smokers and 8.8 and 7.9 per cent in the controls. Addition of nicotine to samples of whole human blood decreased the ascorbic acid level by 24.4 to 31.6 per cent.

Under certain circumstances, the vitamin C levels may be influenced by the administration of various drugs. According to Spitzer and Shapiro,[55] the urinary excretion of vitamin C may be increased significantly following the ingestion of aspirin in the presence of virus infection. Hence they advise that vitamin C should be administered simultaneously with salicylates.

Obviously, there is frequent need for dietary supplementation or food fortification with vitamin C. In mild cases, says Youmans,[56] vitamin C deficiencies can be treated satisfactorily with natural foods having a high vitamin C content. Even those with moderately severe deficiencies, such as patients in whom there are early signs of actual scurvy, can be relieved fairly quickly by similar means, although it is usually advisable to use pure chemical preparations in the initial treatment of such cases. Ascorbic and deficits in such instances usually amount to 2 or 3 Gm. and it is easier to supply such amounts in a concentrated form.

King[39] stresses that, during infancy and early childhood, provision should be made for a regular intake of vitamin C, either in the milk formula or in a specific supplement. The nutrient can be incorporated readily in powder or tablet form in formulas.

Pertinent in this connection are tablets designed by Holmes and his associates[57] to disintegrate rapidly and provide a convenient means for adding to the infant's nursing bottle of milk a standardized, uniform amount of ascorbic acid sufficient to meet the daily nutritional requirements. Such tablets may be prepared by compounding synthetic ascorbic acid with suitable materials for use as an excipient or filler (lactose), a disintegrator (cornstarch), a binder (acacid, gelatin, or glucose), and a lubricant to prevent sticking (purified talc, white petrolatum, calcium stearate, or dried starch). In their studies, ascorbic acid was dissolved in pasteurized milk in the proportion of 75 mg. per liter.

Also of related interest are the studies of Keeney and his colleagues[58] on the stability of ascorbic acid in dried milk products designed especially for infant feeding. They found that the loss of ascorbic acid in the dry powder contained in the open can is negligible during

the first four days. Reilquefied formulas containing approximately 75 mg. per quart lost about 11 per cent of their total ascorbic acid content during 24 hours of storage under ordinary home refrigeration. Warming the refrigerated formula quickly to body temperature just before feeding did not increase the loss of ascorbic acid.

Schroeder[59] advises a diet high in vitamin C content or the administration of ascorbic acid in all conditions that may produce vitamin C deficiency in the adrenals. He also recommends the simultaneous administration of vitamin C when cortisone or corticotropin is administered.

It is known, say Pollack and Halpern[27], that the adrenal cortical hormones play an important role in determining the response to stress. Under stress situations, the adrenal cortex rapidly becomes depleted of its ascorbic acid. For these reasons it is unquestionably desirable to maintain adequate stores of vitamin C in the body at all times.

However, as remarked by Kark,[60] the ascorbic acid requirements are increased as a result of a number of stress conditions which include burns, severe injuries, operations, infections and rheumatic diseases. It has been said,[27] that the very low plasma ascorbic acid levels in severe stress situations are probably not due to pre-existing deficiency, failure of absorption, excretion in the sweat or to storage, but are most likely due to increased utilization. As much as 1 to 2 Gm. of ascorbic acid daily is recommended during the acute stage of stress and 300 mg. of the vitamin daily thereafter. Four times the recommended allowance for normal people, or about 300 mg., will probably suffice under moderate stress conditions.

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(*Continued on page 734*)

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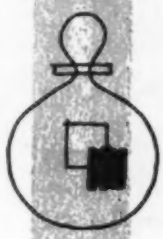

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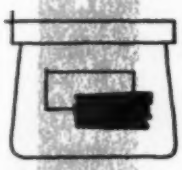

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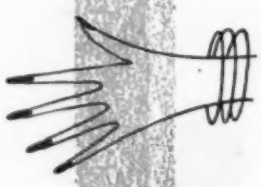

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LIPSTICK DEVELOPMENTS

(*Continued from page 645*)

would not volatilize except upon application and which would not suffer any evaporation loss if packaged in the accepted lipstick container, and would consist of solvents which would not have any irritational effects on the skin. The film so formed should also be capable of easy removal with soap and water. Frankly I cannot see how it could be done.

The developments taking place, however, are all in the direction indicated. It must therefore consist of a series of compromises which all come closer to the theoretical goal even if it is never reached completely. Color is the all important constituent of a lipstick and any work done has as its goal the enhancement of the color applied and the means of making it more durable on the lips. The closer we can come to a lacquer effect the more desirable would be the product if there are no accompanying inconveniences.

PATENT THOUGHTS & TRENDS

(*Continued from page 705*)

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2,673,853—**G. D. Searle—(Beta, beta-Diarylacryloxy)-Alkyl-Ammonium Salts.**
2,673,861—**Upjohn—Epoxypropyl Compounds.**

2,673,862—G. D. Searle—N-(Dialkylaminoalkyl)-Beta, beta, beta-Triaryl-propionamide.

2,673,863—Ciba—Esters of 20,21-Ketols of the Pregnane Series with Acids of the Type of Trimethyl Acetic Acid.

2,673,864-6—Upjohn—Steroids.

2,673,872—Ohio State Univ. Research Found.—Steroid Intermediates.

2,673,273,4—G. D. Searle—Basic Esters of 9,10-Dihydro - 9,10 - Ethanoanthracene - 11 - Carboxylic Acid.

2,673,878—G. D. Searle—Derivatives of Basically Substituted 1-Alkyl-3-Arkyl Ureas.

2,674,560—Armour — Insulin from Pancreas Glands.

2,674,596—J. R. Geigy—Basic Derivatives of Iminodibenzyl.

2,674,597—G. D. Searle—Basically substituted N-Cycloalkylcinnamides.

2,674,598—Monsanto — 2 - Amino - 4 - Methyl - 6 - Alkylamino-pyrimidines.

2,674,605—Ciba—Manufacture of Pregnanes.

2,674,606—Upjohn — 4 - Halo - 11 beta, 17 alpha-Dihydroxypregnane-3-20-Diones.

2,674,608—Societe Organico (Paris)—Caustic Alkali Treatment of Ricinoleic Acid.

2,674,614—Akt. Pharmacia (Sweden)—Thiocarbohydrazines.

2,674,615—Abbott Labs. — 1 - Arylcycloalkane 1-Thiocarboxylates.

2,674,617,8—Upjohn — N - (3 - Alkoxy and Halo - 2-Ketopropyl)-p-Aminobenzoates.

2,674,621—Ortho—Synthesis of Compounds having Vitamin A Activity.

2,674,624—Upjohn — Beta - (Ortho - Methoxy) Phenyl - Isopropyl Para - Methoxy - benzyl Alkyl Amines.

2,675,340—Cutter Labs.—Analgesic Composition. Salicylamide and acetyl salicylate.

2,675,341—General Aniline—Protein Hydrolysate Detoxified by Polyvinyl Pyrrolidone.

2,675,342—Schering—Supersaturated Solutions of Steroid Hormones.

2,675,343—Smith, Kline & French Labs.—Emulsion-Forming Liquid. Pharmaceutical Carrier.

2,675,379—Merck—Sulfa-Quinoxaline Process.

2,675,388—American Home Products—Home Soluble Sulfur Containing Organic Mercury Compounds Having Diuretic Properties.

2,675,393—Givaudan—Cyclization Process of Geranylacetones in Order to Obtain a Mixture of Tetramethyl-2,5,5,9-Hexahydrochromenes.

2,675,395—Merck—Cholanic Acid Series Compounds.

2,675,396—Research Corp.—Steroid Aldehydes.

2,675,405—Lepetit (Italy)—Salts of P-Aminobenzoic Acid and Alkylamines and Amino Alcohols.

2,675,408—Givaudan — Salts of Dibenzyl Beta - Halopropyl Amines.

(Continued on page 736)

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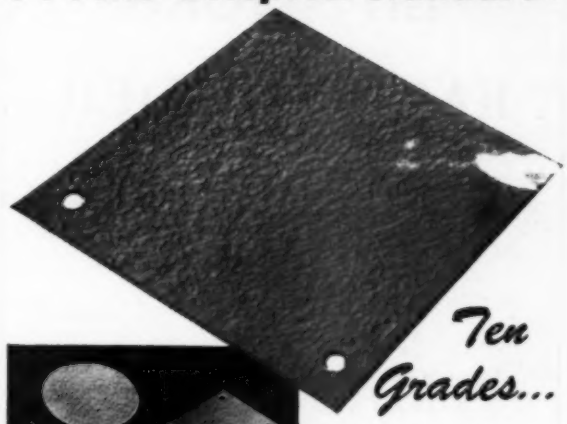

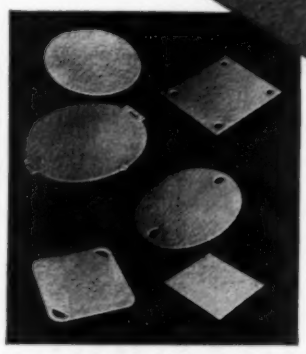

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(Continued from page 735)

Court Cases

2,506,294—G. De Champs et al, Adrenochrome monosemicarbazone compound and haemostatic composition, filed Jan. 14, 1954, D. C., E. D. Tenn. (Greeneville), Doc. 890, Societe Belge de l'Azote et des Produits Chimiques du Marly v. S. E. Messengill Co., Inc.

2,515,898—H. W. Rhodehamel, Jr., Procaine penicillin and therapeutic compositions, filed April 19, 1951, D. C. Del., Doc. 1364, Eli Lilly & Co. v. Heyden Chemical Corp. Stipulation of dismissal.

A.P.M.A. Meeting

(Continued from page 651)

tion toward the development of a sound economic policy in the sense that most of its recommendations "represent a starting point for the development through careful and detailed study of a sound policy."

"Neither in the majority nor in the minority reports of the Commission is there any real statement of basic philosophy, a reply to the simple question—why expand international trade?" said Mr. Powers, who added, "In a debate of this gravity I think it most unfortunate to find these glaring omissions in a report intended to be used by the administration for legislative proposals.

"My own basic approach to this subject is that we should expand international trade not merely to close the dollar gap, as seemed to be the motive of the Randall Commission, but rather for two more fundamental reasons. First, I believe, as I have said, that it is trade, not politics which cements nations. Second, I think that, like our own great industrial development, a similar development on a world-wide basis aided and inspired by the United States would not merely mean more competitors in a market of the same size as many fear, but a great expansion of productivity and purchasing power."

On the subject of foreign aid and the form it should take, Mr. Powers said:

"In general, I think that the long range approach should be to strengthen friendly nations not so much that they imitate our products, break through our tariff lines and invade our domestic market, but so that they may make contributions to world development because they have built the facilities to do so. . . . All of our aid to foreign nations . . . should have as a philosophy putting other nations in a position to make major contributions in future world progress."

In conclusion, Mr. Powers stated, "It seems to me that other means of aiding expansion of international trade, such as dollar grants, technical advice, loans and guarantees are much more important than tariffs in putting friendly nations in a position to export to the United States. It is a much longer-range and more

(Continued on page 738)

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REHEIS COMPANY, INC.
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(*Continued from page 736*)

complex problem that just dropping tariff barriers and *sine qua non* for its solution is not the removal of trade restrictions as much as the building of plants and know-how in the exporting country."

Dr. Joseph C. Hinsey, director of the New York Hospital-Cornell Medical Center, urged the meeting to give continued assistance to the National Fund for Medical Education. He pointed out that, the costs of education, like everything else, have been rising. To balance the factor, tuition fees have gone up 84 per cent since 1940, but they cannot be raised further without excluding from the medical profession some of the most desirable candidates. . . . Either new sources of income must be found or the standards of instruction and research will deteriorate."

The association adopted resolutions: Endorsing President Eisenhower's proposal that an International Atomic Energy Agency be set up; opposing use of the word "pharmacopoeia in connection with the World Health Organization international compendium, and recommending that some other word such as compendium, codex, or formulary be used; commending the Health Information Foundation to the members of the association and strongly urging support of the Foundation; condolences on the deaths of Admiral W. H. P. Blandy, president of the Health Information Foundation; and Carson P. Frailey, retired executive vice-president of the American Drug Manufacturers' association and president of the National Drug Trade Conference.

F.T.C. APPROVES AREA PRICING

(*Continued from page 657*)

competition. If we can, by means of the deal operation, confine this competition largely to the Far West, I think there is good insurance that the deal serves a two-fold purpose.'

"The general picture, therefore, as I see it, is that the former legal patent monopolist in the field and the current dominant seller initiated these deals in order to confine its existing competitors to their local markets in the western states and to prevent these competitors from obtaining any higher percentage of the western market. Assuming these to be the purposes of the deals, they were highly successful as General Foods has localized this competition and has obtained a larger percentage of the national market."

Commissioner quotes again a memorandum taken from the General Foods files:

"Prior to 1939, M.C.P. was selling a liquid pectin in a tin can which did not meet with any success. In 1939 they introduced their powdered product and promoted it aggressively. The above figures show that we lost heavily the first two years of M.C.P. powder competition. In the Southwest, Certo and Sure-Jell combined dropped from 73 per cent of the market to 52 per cent in two years. In 1940 we offered the Sure-Jell in the

(*Continued on page 740*)

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The PerfeKtum semi-automatic stoppering machine is ideally suited for operation under a sterile hood. One attendant can now stopper the complete range of vials up to 40 per minute. The Model RS-100M embodies all the automatic features of hoppering and stopper insertion found in our automatic machine.

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Your dollars work two ways when you use Zinc Oxide in your face and body powders . . . because Zinc Oxide imparts *both* cosmetic and pharmaceutical properties:

1. COSMETIC PROPERTIES

High Covering Power
Zinc oxide gives more covering power *per dollar* than any other high covering pigment used in cosmetic powders.

Deodorant
Zinc oxide neutralizes perspiration acids.

Sunburn-ray screen
Zinc oxide is opaque to ultraviolet light.

2. PHARMACEUTICAL PROPERTIES

Zinc oxide is widely used in dermatology in the form of zinc oxide ointment and calamine lotion.

It owes its popularity, according to one recognized authority,* to a combination of at least three qualities: it is non-toxic, protective and mildly astringent.

* *The Dispensatory of the United States of America, 1950 Edition*

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Welch, Holme & Clark Co., Inc.

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(*Continued from page 738*)

Southwest. We made a good gain on Sure-Jell but M.C.P. made greater gains, resulting in a further sharp decline for Certo. In 1941 we offered deals on both products and registered substantial progress, M.C.P. taking a sharp loss. In 1942 we made a further gain on Sure-Jell but lost a little on Certo. M.C.P. also showed a small gain but you will notice that liquid competition has almost been completely eliminated, Certo and Sure-Jell combined getting 69 per cent of the market compared to 52 per cent in 1940 and 73 per cent in 1938."

Said Commissioner Mead:

"Under this system the small local area businessman cannot compete on even approximately equal terms with the nation-wide distributor. The large corporation can play its area pricing patterns like a piano. It can crush small business competition wherever the latter appears and charge the tariff to its other customers who have no price alternative. . . .

"Because of his limited area distribution, each of the small businessman's customers is generally in competition with the other customers. The small distributor, therefore, must change all of his customers proportionately equal prices or else he may be guilty of an illegal price discrimination. The nation-wide distributor, of course, has many customers who are not in competition with each other and he may charge different prices in different areas without directly injuring the non-favored customers. If the nation-wide distributor can legally use this area price discrimination against his small competitors, he has another powerful weapon to add to his arsenal which includes mass production, nation-wide advertising, large financial resources, research facilities, and many others. Should a large distributor receive a price subsidy from other areas of the country in order to compete with a few small competitors on the West Coast?"

COSMETIC AEROSOLS

(*Continued from page 649*)

The following formulae are acceptable as aerosol shave creams. They are given merely to illustrate the typical non-corrosive creams that are in common use.

No. 1

AEROSOL SHAVE CREAM

Stearic Acid	8.4 per cent
Stearyl Alcohol	1.0 " "
*Sipon LS	4.1 " "
Mineral Oil	6.0 " "
Glycerin	3.0 " "
**Avitex C	30.0 " "
Perfume	0.2 " "
Water	47.4 " "

*American Alcolac Corp., Baltimore, Maryland.
**E. I. DuPont de Nemours, Wilmington, Delaware.

(*Continued on page 741*)

(*Continued from page 740*)

The Sipon, water, glycerin, and Avitex are all heated together to a temperature of 850° C. The stearic acid, stearyl alcohol, and mineral oil are heated separately to the same temperature. The molten fats are poured into the hot water with constant stirring. Stirring is continued intermittently until the cream has cooled to 45° C. The perfume is added at this temperature.

The above cream is packaged in the following manner:

Ninety parts of the shave cream are placed into the container, and 10 parts of a gas are placed into the same container, as follows:

Shaving Cream	90 per cent
Freon 12	5 " "
Freon 11	5 " "

This mixture yields a product which is stable and essentially non-corrosive, the finished product having a pressure of 41 lbs./sq. in. ga.

No. 2
AEROSOL SHAVE CREAM

Stearic Acid	10.5 per cent
Cetyl Alcohol	2.0 " "
Mineral Oil	4.0 " "
Petrolatum	10.0 " "
Propylene Glycol	3.0 " "
*Span 60	2.0 " "
*Tween 60	1.0 " "
Triethanolamine	1.0 " "
TEA Lauryl Sulfate	4.0 " "
Water	62.2 " "
Perfume	0.3 " "

*Atlas Powder Company, Wilmington, Del.

Melt the stearic acid, cetyl alcohol, mineral oil, petrolatum, Span 60, and Tween 60 in a suitable container, and heat to a temperature of 85° C. Heat the water, TEA lauryl sulfate, and propylene glycol together to the same temperature. Add the triethanolamine to the water and pour this solution into the molten fats with constant stirring. Stir until a stable cream has formed, then continue with intermittent stirring until the cream has cooled to 45° C. Add the perfume at this temperature.

This cream may be filled with the same propellant as No. 1 in the same proportions, or the following mixture may be used:

Freon 12	60 per cent
Freon 114	30 " "
Freon 11	10 " "
Shaving Cream	92 per cent
Propellant	8 " "

yielding a lather somewhat stiffer than that in formula No. 1, but at the same time a more moist lather. The pressure of this formulation is 43 lbs./sq. in. ga.

Then **VEEGUM** can be the answer to your problem. This refined, inorganic physical conditioner has proved a boon to pharmaceutical and cosmetic formulators.

VEEGUM is remarkably versatile. *It suspends, emulsifies, thickens, and is thixotropic.*

IF YOUR PROBLEM IS WITH SUSPENDING, VEEGUM provides complete suspension at lower viscosities than organic gums. It is used and recommended as a suspending agent in calamine preparations and suspensions of pigments, deodorants, and sulphur compounds.

IF YOU NEED AN EMULSION STABILIZER, you'll discover that less than 1% **VEEGUM** will permanently stabilize many types of emulsions containing various oils, fats and waxes over a wide range of pH. As an emulsifying agent in hand lotions, shaving preparations, dental creams, deodorants, hair preparations, pigmented make-up, sun-tan lotion and pharmaceutical ointments, **VEEGUM** has no equal.

WHERE VISCOSITY CONTROL CAUSES YOU TROUBLE, VEEGUM eliminates the short-comings of commonly used thickeners. It thickens with heat to maintain product consistency at higher than normal temperatures. Thixotropy gives it the suspending ability of a gel through long periods of storage. Quick dispersion of **VEEGUM** is obtained in either hot or cold water. Here is the ideal viscosifier for shampoos, toothpastes and cosmetic creams, lotions and suspensions.

VEEGUM offers these opportunities for you to keep your formulations from running wild . . . to enhance and improve your product. If you haven't tried this white, opaque, non-tacky and non-gelatinous physical conditioner, ask us for full information today. **VEEGUM** is, of course, non-toxic and non-irritating.

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A significant fact in the formulation of aerosol shaving creams is there is a greater percentage of wetting agents in the pressurized product than will be found in the other types. This is necessary for proper lathering. Also of interest is the type of perfume used in these formulations. They are specially compounded bases and differ materially from those used in the regular products. Several essential oil houses offer perfume bases especially designed for use in aerosol products. Other than these two important distinctions there is no significant difference between the pressurized shave cream and the regular brushless type.

FAIR TRADE'S WEAKNESS

(*Continued from page 643*)

has economic, social and legal consequences which the public should understand. What will happen to our communities if merchandising 'speakeasies' are permitted to drive legitimate retailers to the wall? This is a very grave social question. If Main Street is wiped out by discount houses, what will happen to property values? Who will help pay the taxes? Who will help to provide the leadership in community activities? "Will the discount houses who make a business of being irresponsible, who provide no service, offer no guarantees, who are interested only in the fast dollar and nothing else, fill the vacuum in our committees when the established retailer is wiped out?

"The discount houses do not and cannot advertise because once they advertise a price, their rivals will come out with a lower price. In short, in this dog-eat-dog merchandising which they have revived, each discount house will try to do to its rivals exactly what they have all been doing to every established retailer in the country, namely, to try to destroy them by unfair competition and character assassination. If the discount houses have their way, U. S. retailers won't be spending much on advertising either." Mr. McGuire added:

"The alleged miracles of efficiency and economy which the discount parades are simply old price-juggling tricks in a new guise. They frankly use national brand merchandise as price-footballs but what about the hidden markups on the unfamiliar goods which they sell? They victimize the consumer who may get stuck with defective merchandise and whose standards of value are destroyed so that she no longer trusts honest retailers with honest values."

This will give some impression of the intensity of the fight against the discount houses by a representative of the National Association of Retail Druggists. Furthermore, these statements were contained in an address before the Oklahoma Pharmaceutical Association, a group who would not ordinarily be very interested in the activities of discount houses.

This tends to show the great importance to the welfare and future of fair trade that lies in a much higher rate of enforcement of fair trade than exists at present.

Italian

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For unless enforcement of fair trade is stepped up sharply in the products of some industries, and is brought up to a higher level than exists today in all industries, fair trade has no future. Sooner or later, if present conditions continue, legislators will give another look at the fair trade question with the possibility that it will be repealed for the benefit of many retailers.

It is the opinion of some that a different sort of law should be enacted. Such a law should contain some sort of penalties for violation of the fair trade laws. Under present circumstances, all that happens to the offending retailer is that an injunction is issued against him and in the future he must not cut prices of the products contained in the injunction unless he wishes to face a contempt of court action. Even after this injunction is issued against him, he can cut prices on the goods not mentioned in the injunction and it is then necessary for one or more other manufacturers to obtain additional injunctions against him.

It is for this reason that some manufacturers have brought damage suits against price-cutting retailers. It is the hope of these manufacturers that if the courts will award the manufacturers damages in substantial amounts to be paid by the offending retailers, this might prove a deterrent toward widespread disregard of the fair trade laws.

After all, if fair trade is to be protected, and if it is to continue to be the law of most of the States of the Union, and also if it is to the job for which it was designed, those interested in its welfare must take all possible steps to raise the level of its effectiveness. Fair trade was well conceived, has a laudable purpose, but it is sorely in need of protection.

SIXTY YEARS OF SERVICE

(*Continued from page 653*)

few features of the gala evening's program of which the honored guest was entirely unaware.

Dancing between courses and for some hours following the sumptuous repast contributed to making this historic celebration the most memorable social even in Fritzsche's career.

READERS' QUESTIONS

(*Continued from page 715*)

Toothache Drops: We would greatly appreciate a formula for toothache drops containing the following ingredients: creosote, phenol, oil of cloves, oil of cassia, chloroform and alcohol. PORTLAND.

I have checked the literature available to me and although I have not been able to meet your exact specifications, I think the following toothache essence, as given by Cipes, is in line with what you want:

Oil of cloves	2 dr.
Chloroform	3 dr.
Camphor	4 dr.
Phenol	4 dr.
Oil of turpentine	1 oz.
Alcohol	1 oz.

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THE PERL PISTON FILLING MACHINE with the NEW SELF EXPANDING PISTON

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INDUSTRY'S BOOKS

(*Continued from page 720*)

Fishbein's 1954 Medical Progress, *Edited by Morris Fishbein, M.D., 345 pp., The Blakiston Co., Inc., New York, (1954), Cloth,* **$5.**

The progress of medicine in any one year nowadays is tremendous and difficult to evaluate. Nevertheless the essays which follow by competent authorities in each of the fields concerned do present the trends of research and distinguish as far as possible between permanent accomplishment and that which is in the experimental stage. Contents: Cardiology—Paul D. White. Surgery—Charles W. Mayo and Lowell R. Smith. Nutrition—Stanley Gershoff, Theodore B. Van Itallie and Frederick J. Stare. Gastroenterology—David J. Sandweiss and Frank P. Brooks. Rheumatic Diseases—Edward W. Boland. Endocrinology—Lewis M. Hurxthal. Newer Drugs—Their Actions and Uses —Paul L. Wermer. Urology—Alfonso Davalos and Emile Sayegh. Infectious Diseases—Perrin H. Long. Dermatology—Herbert Rattner. Ophthalmology —Manuel L. Stillerman. Ear, Nose and Throat—Francis L. Lederer and Burton J. Soboroff. Allergy—Leon Unger. Gynecology—Ralph A. Reis. Orthopedic Surgery—Frank R. Ober. Psychiatry—Francis J. Braceland. Rehabilitation Medicine — Howard A. Rusk and Joseph G. Benton. Medical Psychology — Morton A. Seidenfeld. Physical Medicine—Gordon M. Martin and Frank M. Krusen. Summary Notes on Medical Advances—Morris Fishbein. Index.

Fundamentals of Disease, *A Textbook of Pathology and Clinical Pathology for Nurses, by Emmerich Von Haam, M.D., Professor of Pathology and Director of Laboratories, Health Center, Ohio State University, 424 pp., Illus., Springer Publishing Co., Inc., New York, (1953), Cloth,* **$4.75.**

The first parts of this book explain simply the six principal lesions which underlie all disease processes and the pathologic reactions caused by injurious agents. Special pathology of diseases of the various organs and clinical pathology is presented in the extensive third part. This is a practical feature never before included in nursing texts. The author shows what the purpose of the tests is, what the normal and pathological values are, how the tests concern the nurse with respect to handling specimens and caring for the patient before, during and after the tests. Combined with the text are original drawings, charts and photographs—90—of them—especially prepared for the book.

A Formulary for External Therapy of the Skin, *by Chester N. Frazier, M.D., Dr.P.H., Edward Wigglesworth Professor of Dermatology, Harvard Medical School, Chief of the Dermatological Service, Massachusetts General Hospital, and Irvin H. Blank, Ph.D., Research Associate in Dermatology, Harvard Medical School, Massachusetts General Hospital, 118 pp., Charles C. Thomas, Publisher, Springfield, Ill.,* **$3.25.**

This formulary was prepared originally to fill the requirements of the Massachusetts General Hospital. It was to serve the general use of the clinical staff. Medical students and house staff required an understandable guide to the problems presented by the treatment of patients with the cutaneous manifestations of disease. Contents: I. Evolution of the Formulary. II. Objectives of External Therapy. III. Some Principles of Treatment. IV. Cleaning the skin. V. Ointment Vehicles. VI.

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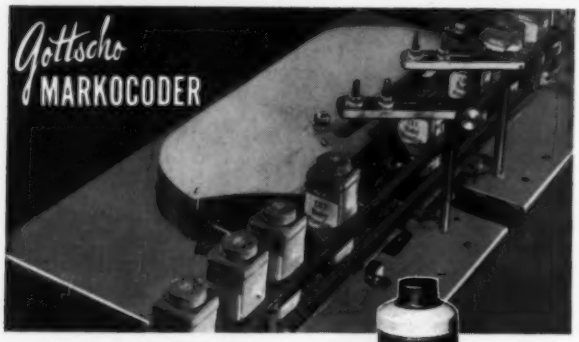

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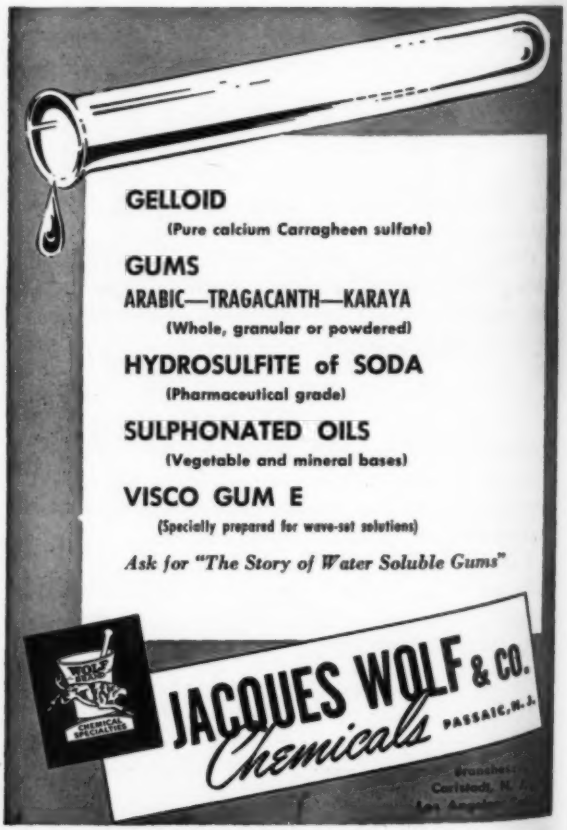

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The Hepatic Circulation and Portal Hypertension, *by Charles G. Child, III, M.D., Professor of Surgery, Tufts College Medical School, Chairman, Department of Surgery, New England Center Hospital. From the Department of Surgery and the Laboratory of Surgical Research of the New York Hospital, Cornell Medical Center, 444 pages with 132 figures, W. B. Saunders Co., Phila., (1954), Cloth,* **$12.00.**

As originally conceived, this book was to have been limited to a consideration of the normal and pathological anatomy and physiology of the portal venous system. It was intended to discuss the clinical aspects of this unique venous circulation and to review the many related experimental studies which have been made upon it, not only in laboratory animals but in man as well. In this fashion, it was hoped to bring together in one volume a useful body of information concerning this poorly understood blood vascular system. Early in the development of the manuscript it was realized that one of the three circulations of the liver could not be separated logically from the other two. Consequently the scope of this volume was broadened to consider not only the portal venous system, but also the intimate circulatory dynamics of blood flowing to and from the liver. As published, this volume will enable the basic scientist to appreciate some of the clinical problems which confront the physician and surgeon in their efforts to manage successfully patients with hepatic disease and related disorders.

Ear, Nose, and Throat Diseases, *by William McKenzie, M.B., F.R.C.S. (Eng.), Surgeon, Royal National Throat, Nose and Ear Hospital, E. & S. Livingstone, Ltd., London, and The Williams & Wilkins Co., Baltimore, 260 pp., Illus., (1953), Cloth,* **$5.**

This book was written for the medical student and its aim is to be interesting rather than exhaustive. Contents. Chapters 1—Notes on Examination of an Ear, Nose and Throat Case. II—Acute Tonsillitis. Acute and Chronic Lymphadenitis. III—Recurrent Tonsillitis. Tonsillectomy in Adults. IV—Tonsils and Adenoids in Children. Retropharyngeal Abscess. V—The Ear. VI—Acute Otitis Media and Mastoiditis. VII—Chronic Suppurative Otitis Media. VIII—Facial Nerve Paralysis. Pain in the Ear. IX—Deafness. X—Vertigo. XI—The Nose. XII—Sinus Infections. Rhinitis. XIII—The Larynx. XIV—Tumors. Biopsy. XV—Foreign Bodies. XVI—The Oesophagus. XVII—Prescriptions. Appendix. Index.

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By F. A. Robinsan, M. Sc. Tech LL.B. 132 pp. Sir Isaac Pitman & Sons, Ltd., London, 1953, Cloth, **15s-**

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